



Riverside at Tea Gardens Concept Plan Application

Environmental Assessment



Volume 1A

for
Crighton Properties Pty Ltd

January 2012

0043707 - Final

www.erm.com

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Environmental Resources Management Australia Pty Ltd Quality System

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Crighton Properties Pty Ltd

Riverside at Tea Gardens
Concept Plan Application

*Environmental Assessment
Report*

Volume 1A - Main Report

January 2012

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EXECUTIVE SUMMARY

Introduction and Proposal

Environmental Resources Management Australia Pty Ltd (ERM) has been engaged by Crighton Properties Pty Ltd (Crighton Properties) to prepare an environmental assessment (EA) of a new Concept Plan under Part 3A of the Environmental Planning and Assessment Act 1979 (EP&A Act) for a residential and tourist development at the Riverside site in Tea Gardens.

A previous EA for an earlier Concept Plan (referred to in this EA as the earlier submission) for the same parcel of land was submitted to the Department of Planning and Infrastructure (DP&I) in September 2008. The earlier submission was withdrawn when it became apparent that there were deficiencies in some of the studies undertaken assessing the proposed development.

This EA has been prepared in accordance with new Director-General's Environmental Assessment Requirements (DGRs), issued in October 2010. It describes the proposal, the environmental implications associated with the key issues of the proposed development and identifies subsequent management and/ or mitigation measures. Architectural and Engineering Plans and Technical Reports, prepared as part of the Environmental Assessment are submitted as supporting documents in Volumes 1B, 2, 3, 4 and 5.

The new Concept Plan for Riverside at Tea Gardens provides for several residential precincts over the site and a tourist/residential precinct located in the north eastern area of the site. In total the development footprint occupies only 34% of the total site. The new Concept Plan seeks consent to develop only 75.2ha of the 222.5ha site, for residential and tourist purposes (including roads, community facilities and associated infrastructure). Crighton Properties is seeking Concept Approval for the following:

- a 67.1ha residential precinct, comprising multiple stages which will have the potential to create approximately 855 dwellings/ lots.*
- 2.6ha dedicated to the provision of active open space including pocket parks featuring children's play equipment, exercise and recreation equipment;*
- an 8.1ha tourist/recreational precinct (including a conference centre and accommodation) in the north east portion of the site capable of supporting up to 65 tourist units adjacent to a 5.6ha site earmarked for the further development of tourist related facilities in the future;*
- a 23.1ha residentially zoned portion of the site is to be dedicated to provide for water sensitive urban design (WSUD) measures, which include the retention of the existing saltwater detention basin and its single drain outlet to the Myall River, and the creation of new freshwater detention ponds as well as multiple new dry water management devices. This area also includes significant areas of open space and passive recreation areas;*
- 59.7ha of residentially zoned land is proposed to be protected and enhanced as open space / wildlife movement corridor;*

- a 28.6ha 7(a) zoned wetland park protected by State Environmental Planning Policy No. 14 – Coastal Wetlands (SEPP 14);
- a 21ha buffer zone, zoned 7(b) which was set aside as an ‘onsite’ offset in June 2000 in return for the 173.5ha balance of the rural zoned land (excluding the SEPP14 wetlands) being rezoned for residential purposes; and
- aside from the proposed 67.1ha of residential and 8.1ha of tourist and residential development and the setting aside of 85.4ha of land for drainage water quality, buffer and wildlife corridor purposes, another 49.6ha of wetlands and ecologically sensitive conservation land is also to be preserved on the site, in perpetuity.

The proposal also includes the upgrading of intersections and associated roadworks and other construction works (such as cycleways) external to the site in Myall Road, as well as access from Toonang Drive, an internal road network; and associated landscaping and infrastructure works.

Lots suited to the establishment of home based business are proposed to be located in selected precincts across the site and will create an environment which supports new businesses and provides a place where people can live, work and recreate. These precincts will have access to a technology / community meeting place that incorporates meeting rooms and facilities to be accessible to all of the residents of the home based business lots.

The Site

The Riverside at Tea Gardens site (‘the site’) incorporates Lots 10 and 40 DP 270100 and Part Lot 1 DP270100 and is approximately 222.5 hectares in area.

The site is bounded by Myall River to the east and Myall Street to the west. The Shearwater Residential Estate lies to the north of the site and residential development of Tea Gardens is to the south. The site has an approximate one kilometre frontage to Myall Street and two kilometre frontage to the Myall River. State Environmental Planning Policy No. 14 – Coastal Wetlands (SEPP 14 adjoins the eastern portion of the site, adjacent to the Myall River. These wetlands, which are 28.6ha in area, were rezoned 7(a) when the adjoining rural zoned land was rezoned for residential purposes in June 2000.

Part of the Riverside Estate has previously been developed and comprises a range of residential, retail/commercial, recreation and tourist development including 261 residential lots that have been sold or are on the market, a 3600m² shopping centre and supermarket as well as a state of the art medical centre, service station and monthly markets. A 3000 square metre hardware store was recently approved and is expected to be operational by mid 2012.

Recent History

An Environmental Assessment Report for the previous Concept Plan and Project Application was prepared in accordance with the Director-General’s Environmental Assessment Requirements (DGR’s) issued on 16 September 2008. The Environmental Assessment Report was placed on public exhibition for a period of 30 days from 19 February 2009 to 20 March 2009.

The Department of Planning (DoP) appointed an Independent Hearing and Assessment Panel (IHAP), which was subsequently modified to a Planning and Assessment Commission (PAC), to undertake an expert review of the proposed development. The terms of reference of the PAC were focused on the review on two main areas: the ecological constraints of the site and the hydrological issues associated with groundwater, the SEPP14 wetland and flooding. The PAC undertook a site inspection on 6 April 2009 and held a Preliminary Public Hearing on 7 April 2009.

The PAC could not reach a unanimous view on recommendations concerning the ecological constraints of the site, and subsequently issued two reports, one being a majority report, the other a minority report. The PAC submitted its reports to the DoP in July 2009. The PAC concluded in its majority report that the vegetation mapping contained within the EAR was “grossly deficient” and that it was “not possible to define the boundaries of the endangered ecological communities and threatened species habitat with certainty”. The PAC strongly suggested that new vegetation mapping and fauna habitat mapping be undertaken with any revised proposal so as to properly inform any impacts upon the site and required mitigation measures.

In a letter dated 22 October 2009, the DoP raised the following concerns regarding the Concept Plan and Project Application:

- 1. The size of the commercial area is considered excessive and not required for the likely future population;*
- 2. The traffic impact assessment inadequately considers traffic generation and other aspects of the proposal;*
- 3. The subdivision layout does not adequately address the constraints plan and site analysis plan;*
- 4. The proposal exceeds the capacity allocated for the development within the current servicing strategies of MidCoast Water and an Integrated Water Cycle Management Plan should be required;*
- 5. There are drafting issues which need to be addressed in the Community Management Statements;*
- 6. The Voluntary Planning Agreement (VPA) needs to be amended in several areas;*
- 7. Avoidance of Acid Sulphate Soils does not appear to have been considered in the project; and*
- 8. The proponent has not adequately established that the surface and groundwater flows to the adjoining SEPP 14 Wetland would remain unaltered.*

Prior to the Minister for Planning making a determination on the Concept Plan and Project Application, Crighton Properties withdrew the application. The application was withdrawn to enable additional information to be provided and studies to be undertaken to address issues raised by the PAC, DoP and other government agencies.

The additional investigations required have now been completed and has resulted in significant modifications to the development footprint.

The current proposal differs from that previously lodged with the DoP in several key respects. Changes have been made to address concerns raised by the PAC, government agencies and the DoP. Key changes include the following:

- *the proposed 4 hectare expansion of the existing commercial area has been removed from the Concept Plan;*
- *Precinct 1 which included 71 lots previously located in the south east portion of the site has been deleted and will now become part of the conservation area;*
- *Approximately 50 residential lots have been removed from the north and north north west portion of the site to allow a larger open space corridor in this area.. The overall number of dwellings/ lots proposed has been reduced from approximately 1040 to 920 (including tourist units);*
- *An entirely new stormwater management regime has been adopted which utilises a two stage approach (primary and secondary) to stormwater treatment which has resulted in:*
 - *more 'dry' (primary) water management devices (not in contact with the groundwater table) are proposed and the number of detention ponds has been reduced. There is now no link between the saltwater and freshwater basins and the single existing drain outlet to the Myall River will not be upgraded or duplicated; and*
 - *a new Integrated Water Cycle Management Strategy has been prepared in consultation with MidCoast Water;*
- *additional biodiversity mapping and a new ecological assessment for the project has been undertaken by a newly appointed ecological consultant. This assessment has been based on the BioBanking methodology; and*
- *a detailed soil assessment of the land proposed to be used for urban development on the site was undertaken, the findings of which have been integrated into the Biodiversity mapping and BioBanking reports. These findings demonstrate a significantly reduced presence of Endangered Ecological Communities (EEC) on the site.*

Conclusion

The proposal provides a variety of dwelling types, which will appeal to a range of household types, thereby contributing to a more diverse housing pattern and social character within Tea Gardens. The proposal represents the ongoing development of the town of Tea Gardens in a northerly direction over level land adjoining the District Shopping Centre.

The Riverside Site has been an integral part of Great Lakes Council's strategic planning and population growth projections for the Tea Gardens area for over a decade. The local community will also benefit significantly from the proposed development with an estimated \$256 million of expenditure over the building phase of the project supporting 1,557 full time year equivalent local jobs across all sectors, spread across the anticipated 10 year life of the project. This project will facilitate anticipated growth of the Mid North Coast and provide a holistic response to growth within the Tea Gardens/Hawks Nest area.

An assessment of the natural constraints of the site, urban capability, availability of public services, access to employment, commercial and community facilities and housing choice and location have all been taken into consideration when planning Riverside. These considerations are discussed in detail throughout this Environmental Assessment Report and supported by technical studies and surveys contained within Volumes 1B, 2, 3, 4 and 5.

It should be noted that the environmental assessment responds to the issues raised by the PAC in respect to the previous proposal. While the current proposal is slightly larger than the indicative footprint suggested in the PAC majority report, the assessment demonstrates that the current proposal is environmentally responsive given the benefit of having better quality constraints mapping than that which the PAC previously had access to.

INTRODUCTION

This chapter describes the project, including the site and surrounds and includes background information about the site and project.

Crighton Properties Pty Ltd (Crighton Properties) seeks Concept Plan approval for a residential and tourist development at the Riverside site in Tea Gardens under Part 3A of the *Environmental Planning and Assessment Act, 1979* (EP&A Act).

Environmental Resources Management Australia Pty Ltd (ERM) has been engaged by Crighton Properties to prepare an environmental assessment (EA) of a Concept Plan for a residential and tourist development. This EA has been prepared in accordance with the Director-General's Environmental Assessment Requirements, issued on 13 October 2010. It describes the proposal, the environmental implications associated with the proposed development and identifies subsequent management and mitigation measures.

A key component of the EA is the Economic Assessment Report which deals specifically with the State's goal of fostering decentralisation and encouraging communities to expand, to a sustainable size through the provision of a wide range of housing options, which amongst other goals, address affordability issues and help to generate local employment. Other characteristics of a sustainable community include low energy consumption, walkability and the building of a cohesive community of residents caring and sharing for one another.

Riverside (previously referred to as Myall Quays) was rezoned in June 2000, after a detailed Local Environmental Study (LES) was prepared which determined that approximately 80% of the 194.1ha rural zoned site (excluding the 28.6ha SEPP 14 wetlands) should be rezoned for residential purposes. Another portion of the site comprising 21ha in area was set aside to provide a buffer between the residentially zoned land and the adjoining SEPP 14 wetland.

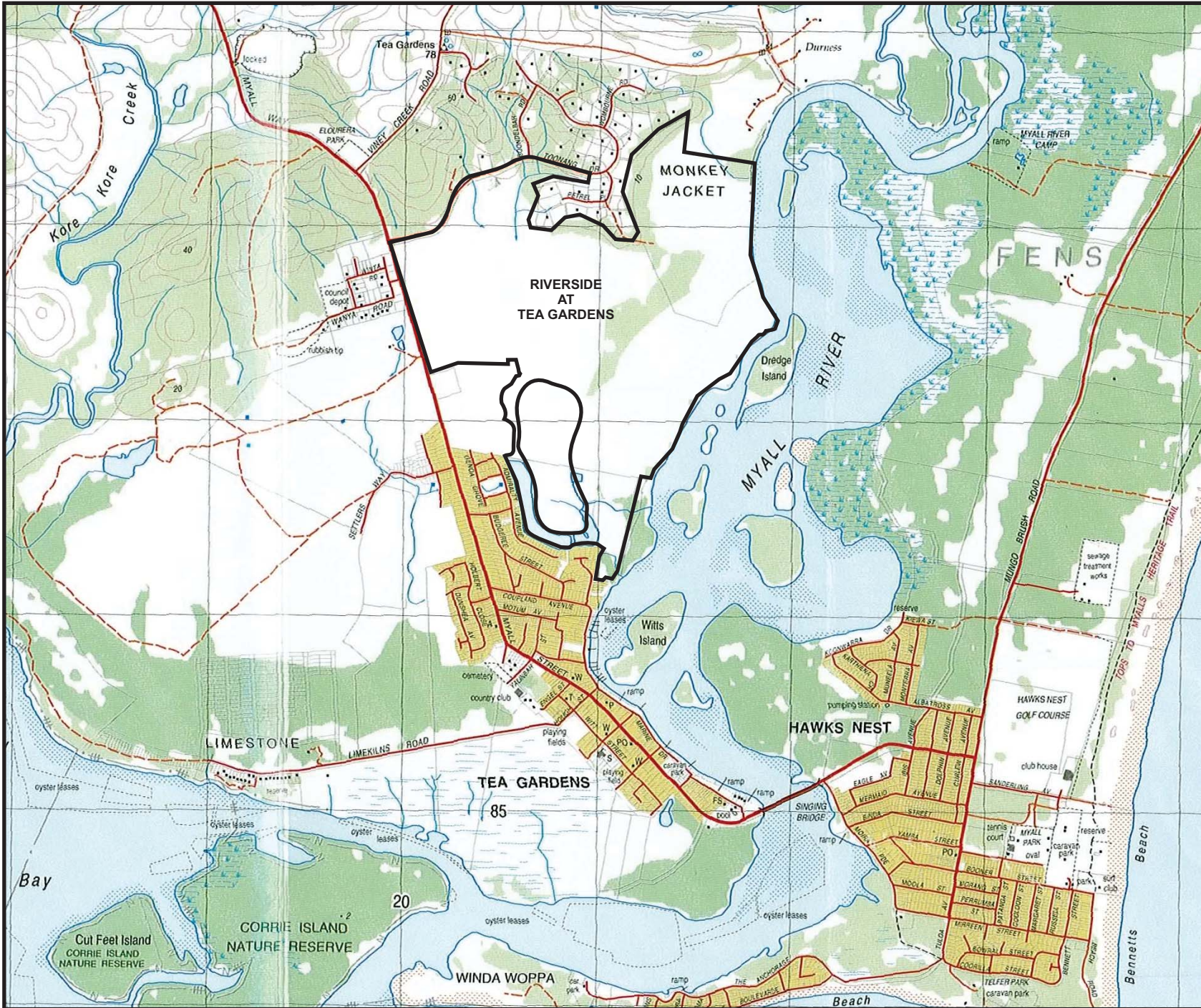
1.1

BACKGROUND

Crighton Properties, or its affiliated companies and associates, are the owner of three substantial development sites at Tea Gardens on the Mid North Coast of NSW. A locality plan is provided in *Figure 1.1*. In 1991 Crighton Properties acquired the site currently known as 'Riverside' in Tea Gardens, a development formerly known as 'Myall Quays'. The site lies immediately to the west of the Myall River and to the east of Myall Street (the main road linking Tea Gardens / Hawks Nest with the Pacific Highway). This site has subsequently been subdivided and comprises two large lots. The third development site owned by Myall River Downs Pty Ltd (part of the Crighton Groups) is known as the 'Myall River Downs' site and comprises approximately 320 hectares of land located to the west of the Riverside site and on the western side of Myall Street.

The Myall River Downs Estate has the potential for the creation of approximately 1500 dwellings. A Concept Masterplan has been prepared illustrating how the development of both the Myall River Downs and Riverside at Tea Gardens sites would occur. The Concept Masterplan was based on the findings of environmental studies and design forums held with members of the community, Councillors and Council officers. The Concept Masterplan is provided in *Annex A* in *Volume 1B*.

The Myall River Downs site is not part of this Concept Plan Application however, it is currently going through a rezoning process.



Legend
 [Thick black line] Riverside at Tea Gardens Site Boundary

Source:
 1:25,000 Topo Series Port Stephens Sheet

Suffix	Revisions	Date	Init
R0	Preliminary Issue	01-12-11	JD

Figure 1.1
Locality Plan

Client: Crighton Properties Pty Ltd
 Project: Concept Plan 2011 Environmental Assessment Riverside at Tea Gardens
 Drawing No: 0043707h_CP_EA_11_C001_R0.cdr
 Date: 01/12/2011 Drawing size: A4
 Drawn by: JD Reviewed by: SO'CO
 Scale: Refer to Scale Bar

0 250 500 750m

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This EA specifically relates to the Riverside site in Tea Gardens. Crighton Properties originally lodged a rezoning request with Great Lakes Council for a multi-stage residential/resort development on the site. The Council first resolved to prepare a draft Local Environmental Plan (LEP) for the site in 1989 subject to the findings of a formal Local Environmental Study (LES). The LES was prepared in 1991 and 80% of the site was finally rezoned to 2(f) Mixed Residential - Commercial in 2000.

In 2002 Crighton Properties began the process of seeking approval to develop a substantial portion of the 2(f) zoned land for residential purposes and for a nine hole golf course and tourist facilities. Following the introduction of *State Environmental Planning Policy No 71 - Coastal Protection* (SEPP 71) in November 2002, a Master Plan was required to be adopted by the Minister for Planning before any further residential subdivisions could be approved.

A Planning Focus Meeting was held on site on 28 December 2003 to discuss the Master Plan and the various development proposals. Following that meeting, discussions were held with senior staff from the Department of Infrastructure, Planning and Natural Resources (DIPNR) who advised that it would be unlikely if DIPNR would support the proposed golf course on the site, as Council had indicated that it was keen to support a retail centre being developed on site and maximising yields on all land within walking distance (500m) of a shopping centre was a fundamental cornerstone of all new mixed use developments.

Director-General's requirements for an EIS were subsequently issued by the Department of Infrastructure, Planning and Natural Resources in January 2004 (Ref: N91/00721) for a proposed artificial water detention body to serve the proposed commercial/residential/tourist and recreational components planned for the site. The Department of Planning (DoP) also provided requirements regarding the preparation of a Master Plan for the development under SEPP 71 (Ref: S03/03010).

Following the introduction of Part 3A of the *Environmental Planning and Assessment Act 1979* (EP&A Act) and State Environmental Planning Policy (Major Development) 2005, the Minister for Planning confirmed by letter dated 16 September 2008 (REF: 904 1553) that the project was a matter to which Part 3A of the *Environmental Planning and Assessment Act, 1979* (EP&A Act) applies, and that an application may be lodged with the Director General.

An Environmental Assessment Report for a Concept Plan and Project Application was subsequently prepared in accordance with the Director-General's Environmental Assessment Requirements (DGR's) issued on 16 September 2008. The Environmental Assessment Report was placed on public exhibition for a period of 30 days from 19 February 2009 to 20 March 2009.

The DoP appointed an Independent Hearing and Assessment Panel (IHAP), which was subsequently modified to a Planning and Assessment Commission (PAC), to undertake an expert review of the proposed development. The terms of reference of the PAC were focused on the review on two main areas: the ecological constraints of the site and the hydrological issues associated with groundwater, the SEPP14 wetland and flooding. The PAC undertook a site inspection on 6 April 2009 and held a Preliminary Public Hearing on 7 April 2009.

The PAC could not reach a unanimous view on recommendations concerning the ecological constraints of the site, and subsequently issued two reports, one being a majority report, the other a minority report. The PAC submitted its reports to the DoP in July 2009 (refer to *Annex Q* in *Volume 1B* for PAC Majority and Minority Reports).

The overall recommendations of the majority report were that:

- The proposals were not considered acceptable in their previous form. They should either be refused or the Proponent be requested to review the proposals with a view to submitting a preferred project report consistent with the content of the majority report.
- That the Proponent be requested to take particular note of the deficiencies identified in both the accuracy and adequacy of the information presented in the previous EAR and supporting documents and also note the guidance provided by the Commission as to the nature and standard of information that will be required for adequate assessment of any future proposal or preferred project report for this site.
- That the relevant government agencies be requested to take an integrated approach to considering the various aspects of development of this site. The Commission recommended that the ecological constraints be considered as the highest priority and that stormwater management and groundwater management be approached with a view to maximizing the residual area available for development without compromising key aspects of stormwater management or impacting groundwater dependent ecosystems.

In a letter dated 22 October 2009, the DoP raised the following concerns regarding the Concept Plan and Project Application:

- the size of the commercial area is considered excessive and not required for the likely future population;
- the traffic impact assessment inadequately considers traffic generation and other aspects of the proposal;
- the subdivision layout does not adequately address the constraints plan and site analysis plan;

- the proposal exceeds the capacity allocated for the development within the current servicing strategies of MidCoast Water and an Integrated Water Cycle Management Plan should be required;
- there are drafting issues which need to be addressed in the Community Management Statements;
- the Voluntary Planning Agreement (VPA) needs to be amended in several areas;
- avoidance of Acid Sulphate Soils does not appear to have been considered in the project; and
- the proponent has not adequately established that the surface and groundwater flows to the adjoining SEPP 14 Wetland would remain unaltered.

Prior to the Minister for Planning making a determination on the Concept Plan and Project Application, Crighton Properties withdrew the application. The application was withdrawn to enable additional information to be provided and studies to be undertaken to address issues raised by the PAC, DoP and other government agencies. The additional investigations required have now been completed and these investigations have resulted in significant modifications to the proposed development including a reduction in the development footprint.

The current proposal thus differs from the earlier proposal in a number of key respects. Changes have been made to address concerns raised by the PAC, government agencies and DoP, as well as address issues prompted by climate change predictions. Key changes include the following:

- the previously proposed 4 hectare expansion of the existing commercial area has been removed from the Concept Plan;
- Precinct 1 which included 71 lots previously located in the south east portion of the site has been deleted and the land that was earmarked to support this development is now proposed to become part of land earmarked for conservation;
- Approximately 50 residential lots have been removed from the north and north north west portion of the site to allow a larger open space corridor in this area.. The overall number of dwellings/ lots proposed has been reduced from approximately 1040 to 920 (including tourist units);
- An entirely new stormwater management regime has been adopted which utilises a two stage approach (primary and secondary) to storm water treatment which has resulted in:

- more 'dry' (primary) water management devices (not in contact with the groundwater table) are proposed and the number of detention ponds has been reduced. There is now no link between the saltwater and freshwater basins and the single existing drain outlet to the Myall River will not be upgraded or duplicated; and
- a new Integrated Water Cycle Management Strategy has been prepared in consultation with MidCoast Water;
- additional biodiversity mapping and a new ecological assessment for the project has been undertaken by a newly appointed ecological consultant. This assessment has been based on the BioBanking methodology; and
- a detailed soil assessment of the land proposed to be used for urban development on the site was undertaken, the findings of which have been integrated into the Biodiversity mapping and BioBanking reports. These findings demonstrate a significantly reduced presence of Endangered Ecological Communities (EEC) on the site.

On 16 September 2010 the Deputy Director General, Development Assessment and Systems Performance revoked the previous Minister's declaration issued on 4 September 2008, authorised the submission of a Concept Plan for the proposed development and declared the project as being one to which Part 3A of the EP&A Act applies for the purpose of section 75B of that Act.

The Riverside at Tea Gardens site ('the site') incorporates Lots 10 and 40 (previously Lot 34) DP 270100, and Part Lot 1 DP 270100 - totalling approximately 222.5 hectares in area. The portion of the site zoned to accommodate urban development (residential and tourist uses) is 182.9ha but under this current proposal, less than 34% of the site (75.2ha) is proposed to be developed for urban purposes.

The site is bounded by Myall River to the east and Myall Street to the west (refer to *Figure 1.2*). The Shearwater Residential Estate lies to the north of the site and residential development of Tea Gardens is to the south. The site has an approximate one kilometre frontage to Myall Street and two kilometre frontage to the Myall River. *State Environmental Planning Policy No. 14 - Coastal Wetlands* (SEPP 14) applies to wetlands within the eastern portion of the site adjacent to the Myall River. A 21ha environmental buffer to these wetlands was established and zoned 7(b) when the site was rezoned in 2000.

The site is flat with generally sandy soils. There is a slight fall to the south. The site ranges in height from 0.6m Australian Height Datum (AHD) (along the foreshore of the Myall River) to 20m AHD (at the northern end of the side adjacent to the Shearwater Estate). However, most of the site varies in height from between 1.6m AHD to 5.0m AHD.

Part of the Riverside Estate has previously been developed and comprises a range of residential, retail/commercial, recreation and tourist development including 261 residential lots that have been sold or are on the market, a 3600m² shopping centre and supermarket as well as a state of the art medical centre, service station, construction about to commence on a 3000 square metre hardware store and monthly markets. There are a range of development consents related to this area as a result of the staged nature of the development. The most relevant development consents are provided in *Volume 1B, Annex B* along with the history of the creation of the detention lake.

Distance to:	
Pacific Hwy	12 km
Karuah	24 km
Bulahdelah	39 km
Raymond Terrace	51 km
Newcastle	76 km
Sydney	215 km

Water detention & treatment basin. Wildlife movement & water management corridor


Water management & open space corridors.

Extended lake in this location

Toonang Drive

Existing rural residential estate - 'Shearwater'

Legend

 Riverside at Tea Gardens Site Boundary

Source:

Crighton Properties - Context Plan R.C.- 01 November 2011 Rev: N

Suffix	Revisions	Date	Init
R0	Preliminary Issue	05-12-11	JD

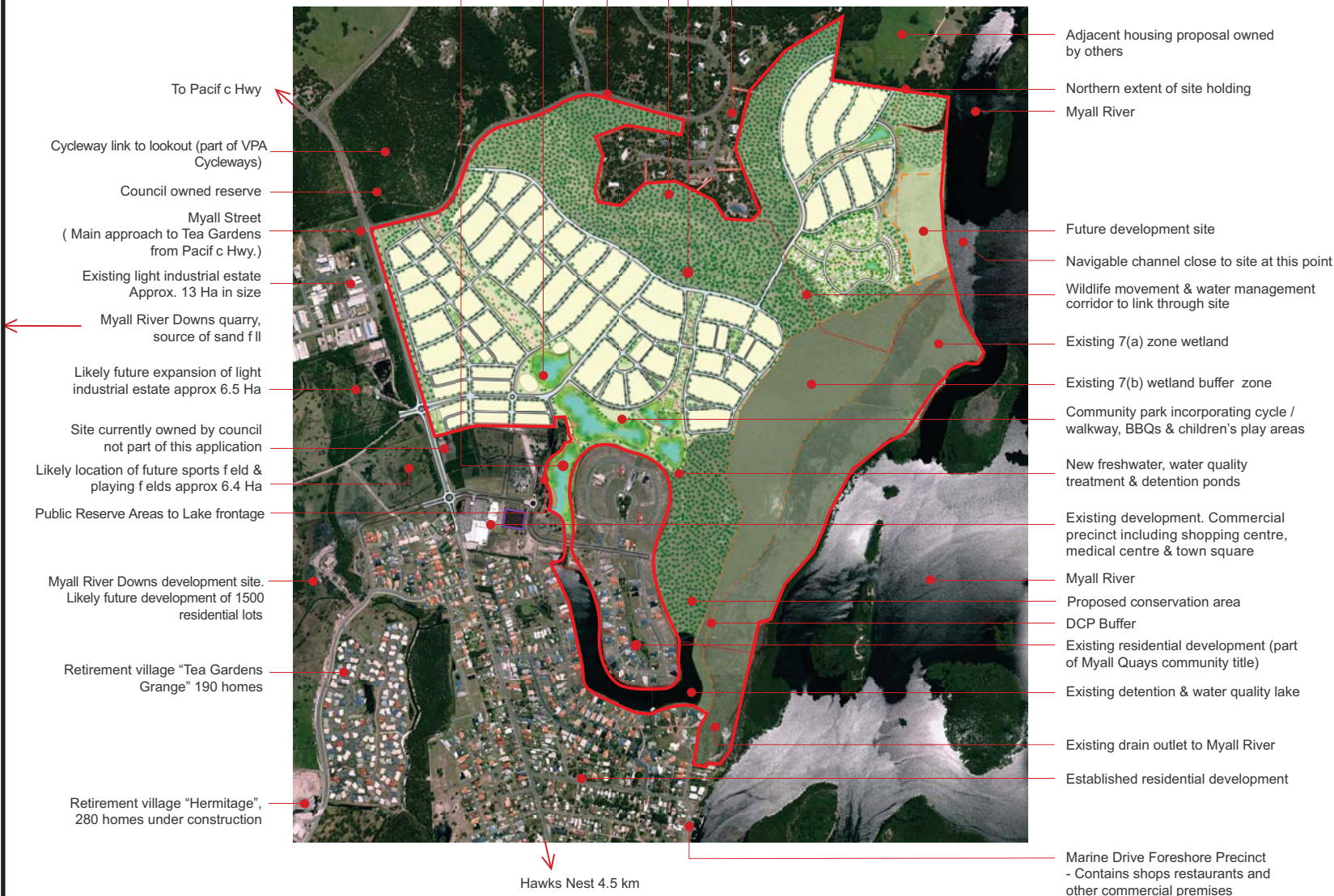
Figure 1.2
Context Plan

Client:	Crighton Properties Pty Ltd		
Project:	Concept Plan 2011 Environmental Assessment Riverside at Tea Gardens		
Drawing No:	0043707h_CP_EA_11_C002_R0.cdr		
Date:	05/12/2010	Drawing size:	A4
Drawn by:	JD	Reviewed by:	SO'C
Scale:	Refer to Scale Bar		



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This Environmental Assessment report forms a stand alone document supported by technical reports contained in six volumes. *Volume 1A* contains a description of the scope of the project, consideration of the relevant statutory and non-statutory provisions, a summary of the findings of the technical investigations undertaken as part of the environmental assessment, justification for the project and a draft Statement of Commitments.

Volume 1A includes the following chapters:

Chapter 1: provides an introduction and relevant background information and an overview of the recent history of the site and project;

Chapter 2: compares the previous proposal with the new Concept Plan and discusses Director General Requirements (DGRs).

Chapter 3: provides details regarding the site analysis and provides justification for the Concept Plan. It then describes what is proposed under the Concept Plan and discusses the principles informing the design as well as proposed staging and Community Title arrangements.

Chapter 4: sets out the relevant Commonwealth, State, regional and local statutory requirements that relate to the proposal.

Chapter 5: provides a risk assessment undertaken for the proposed project, identifying the key environmental and social risks;

Chapter 6: contains summaries of the key issues and potential impacts identified in the environmental assessment including measures and strategies proposed to mitigate any adverse impacts on the environment. The environmental assessment includes investigations in relation to water management, traffic management, flora and fauna, hazard management (bushfire, acid sulphate soils) infrastructure provision, heritage significance and socioeconomic impacts of the proposal;

Chapter 7: outlines the consultation that has taken place with government authorities and the community with respect to the proposed development;

Chapter 8: provides a detailed justification for the Concept Plan in response to the concerns raised by the Planning Assessment Commission (PAC).

Chapter 9: documents the draft Statement of Commitments which sets out the management, mitigation and monitoring measures to be implemented to minimise any potential negative impacts associated with the project;

Chapter 10: draws conclusions based on the finding in the previous chapters and provides a justification in terms of the suitability of the site for the proposed development and the public interest.

Volumes 1B, 2, 3 4 and 5 contain specialist reports, plans and response tables which form the basis of the Environmental Assessment.

This chapter summarises the differences between the previous Concept Plan and the current Concept Plan and provides a table which cross references the Director Generals Requirements.

2.1

PROJECT SUMMARY

The 2011 Riverside Concept Plan as illustrated in *Figure 2.1* has evolved following community consultation, negotiation with government agencies and as a result of further information from new and revised specialist studies. A comparison table which provides a breakdown of land use components comparing the previous Concept Plan (January 2009) which was placed on public exhibition and the current Concept Plan (December 2011) is provided in *Table 2.1*. For ease of comparison, the previous Concept Plan (January 2009) is also included at *Figure 2.2*.

Table 2.1 Land Use Table

Concept Plan		December 2011		January 2009	
		Ha	%	Ha	%
Built Area	Residential (Including Roads and Community Facilities)	67.1	30.2	83.6	37.2
	Tourist/Residential	8.1	3.6	8.4	3.7
Sub total of built area		75.2ha	33.8%	92 ha	40.9%
Open Space, Recreation and Conservation	Wetlands (Zoned 7(a))	28.6	12.9	28.4	12.6
	Buffer Zones (Zoned 7(b))	21.0	9.4	20.6	9.2
	Additional conservation buffer	17.8	8.0	1.4	0.6
	Wildlife Corridors	41.9	18.8	27.3	12.1
	Myall Foreshore Park	-	-	5.6	2.5
	Drainage Corridors, Ponds and Large Parks	23.1	10.4	35.1	15.6
	Pocket Parks	2.6	1.2	2.6	1.2
	Existing Detention and water quality lake	6.7	3.0	6.7	3.0
Sub Total of open space		141.7ha	63.7%	127.7ha	56.8%
Future Development Site		5.6ha	2.5%	5.0	2.2
Total of Combined Land Uses		222.5ha	100%	224.7.0 ha	100%
Lot Breakdown	Residential (variety of lots)	855		980	
	Tourist Precinct -lodges	50		50	
	Tourist Precinct - houses	15		15	
	Total Lots	920		1045	

Source: *Figure 2.1* and *Figure 2.2* (Crighton Properties)



Legend

- Riverside at Tea Gardens Site Boundary

Item	Description
1	Extent of concept plan area 'Riverside' at Tea Gardens.
2	Existing 7(a) wetland zone.
3	Existing 7(b) buffer zone.
4	Wildlife movement corridor.
5	Water management & open space corridors.
6	Community parks incorporating walking/cycle ways, BBQs, children's play area equipment.
7	Community pocket parks.
8	Not Applicable
9	Not Applicable
10	Existing detention and water quality lake.
11	New fresh water, water quality management & detention ponds.
12	Existing residential development.
13	Foreshore Setback line.
14	Future precinct community facilities.
15	Site area currently owned by Great Lakes Council.
16	Separate medium density/commercial precinct (not part of this application-current waver issued by DoP.)
17	Tourist lodgings precinct.
18	Additional land proposed for conservation
19	Proposed residential lot development to be developed under community title.
20	Future development site.
21	Existing house.
22	DCP buffer.
23	Location of known midden & buffer.
24	Existing drain outlet to Myall River.
25	Existing drainage swale
26	Existing shopping centre/medium density approvals
27	Future connecting road

Land Use Legend		
Total Site	Ha	%
Open Space		
- Wetlands (zoned 7a)	28.6	12.9
- Buffer Zones (zoned 7b)	21.0	9.4
- Additional Conservation Buffer	17.8	8.0
- Wildlife Corridors	41.9	18.8
- Drainage Corridors, Ponds & Large Parks	23.1	10.4
- Pocket Parks	2.6	1.2
- Existing detention & water quality lake	6.7	3.0
Total	141.7 Ha	63.7%
Built Upon Area		
- Residential (including roads & community facilities)	67.1	30.2
- Tourist/Residential (Lodgings)	8.1	3.6
Total	75.2 Ha	33.8%
Future Development Site		
Total	5.6 Ha	2.5%
Total	222.5 Ha	100%

Source:

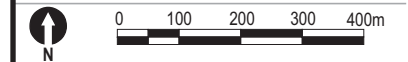
Crighton Properties - Concept Plan R.C.- 03/ November 2011 Revision N

Suffix	Revisions	Date	Init
R0	Preliminary Issue	06-12-11	JD

Figure 2.1

Concept Plan for Riverside at Tea Gardens

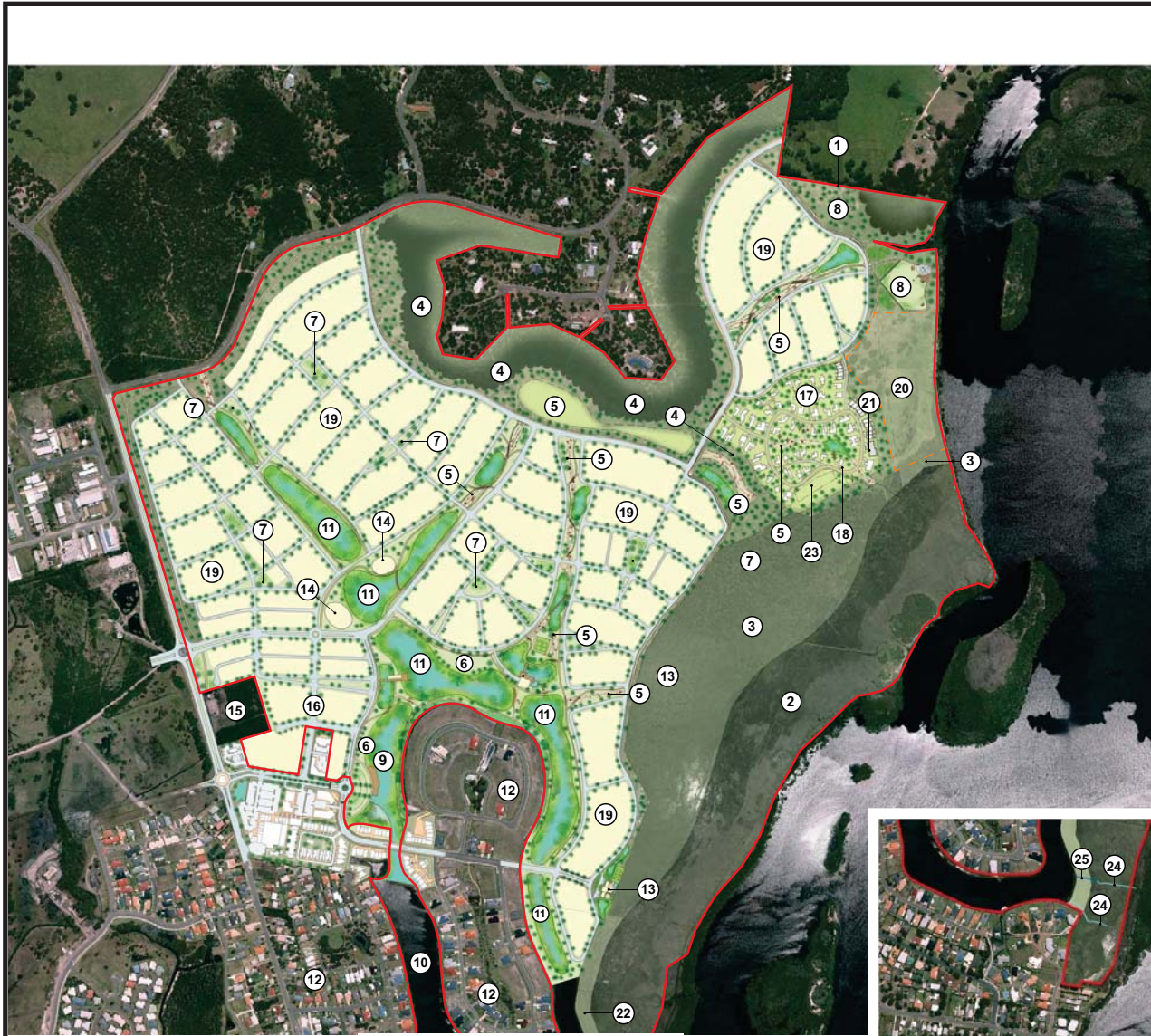
Client: Crighton Properties Pty Ltd
 Project: Concept Plan 2011 Environmental Assessment Riverside at Tea Gardens
 Drawing No: 0043707h_CP_EA_11_C003_R0.cdr
 Date: 06/12/2011 Drawing size: A4
 Drawn by: JD Reviewed by: SO'C
 Scale: Refer to Scale Bar



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Item	Description
1	Extent of concept plan area 'Riverside' at Tea Gardens.
2	Existing 7(a) wetland zone.
3	Existing 7(b) buffer zone.
4	Wildlife movement corridor.
5	Water management & open space corridors.
6	Community parks incorporating walking/cycle ways, BBQs, children's play area equipment.
7	Community pocket parks.
8	Myall foreshore park including structured and unstructured open space.
9	Extended lake area for water detention & water quality management (2.0 Ha).
10	Existing detention and water quality lake.
11	New fresh water water quality management & detention ponds.
12	Existing residential development.
13	Precinct community facilities.
14	Future precinct community facilities.
15	Site area currently owned by Great Lakes Council.
16	Super Lots for future development.
17	Tourist lodgings precinct.
18	Conference & community facilities, associated low rise town house accommodation.
19	Proposed residential lot development to be developed under community title.
20	Future development site.
21	Existing house.
22	DCP buffer.
23	Location of known midden & buffer.
24	Existing drain outlet to Myall River.
25	Existing drain to Myall River to be extended to connect with existing lake.

Land Use Legend		
Total Site	Ha	%
Open Space		
- Wetlands (zoned 7a)	28.4	12.4
- Buffer Zones (zoned 7b)	20.6	9.0
- Additional Conservation Buffer	1.4	0.6
- Wildlife Corridors	27.3	11.9
- Myall Foreshore Park	5.6	2.4
- Drainage Corridors, Ponds & Large Parks	35.1	15.4
- Pocket Parks	2.6	1.1
- Existing detention & water quality lake	6.7	2.9
Total	127.7 Ha	55.7%
Built Upon Area		
- Residential (including roads & community facilities)	83.6	36.5
- Tourist/Residential (Lodgings)	8.4	3.7
- Future Development Site	5.0	2.2
- Commercial/Retail	4.3	1.9
Total	101.3 Ha	44.3%
Total	229.0 Ha	100%

Legend
 Riverside at Tea Gardens Site Boundary

Source:
 Crighton Properties - Plan R.C - 03

Suffix	Revisions	Date	Init
R0	Preliminary Issue	20-12-11	JD

Figure 2.2
Previous Application Concept Plan for Riverside at Tea Gardens - 2009

Client: Crighton Properties Pty Ltd
 Project: Concept Plan 2011 Environmental Assessment Riverside at Tea Gardens
 Drawing No: 0043707h_CP_EA_11_C035_R0.cdr
 Date: 20/12/2011 Drawing size: A4
 Drawn by: JD Reviewed by: SO'OC
 Scale: Refer to Scale Bar

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2.2

DIRECTOR GENERAL'S REQUIREMENTS

The Director General's Requirements (DGRs) for the preparation of the EA are provided in *Annex C (Volume 1B)* of this report. A summary of the key issues set out in the DGRs, as well as the relevant section in this EA report in which they are addressed is provided in *Table 2.2*.

Table 2.2 Director General Requirements

Key Issue	Relevant Section in the EA Report
General Requirements	
Part A: Concept Plan Application	
1. An executive summary;	Executive Summary
2. An outline of the scope of the project including: <ul style="list-style-type: none"> (i) Any development options; (ii) Justification for the project taking into consideration any environmental impacts of the project, the suitability of the site and whether the project is in the public interest; (iii) Justification for any departure of the development footprint from the areas identified by the Planning Assessment Commission (PAC) as 'developable with constraints'; (iv) Outline of the staged implementation of the project. 	Outline – <i>Chapter 1</i> Justification – <i>Chapter 8</i> Staging – <i>Section 3.6</i>
3. A detailed response to all the issues raised by the PAC.	<i>Chapter 8 and Annex D of Volume 1B</i>
4. A thorough site analysis and description of the existing environment	Section 3.1 and <i>Figure 3.1 and Figure 3.2</i> Site Analysis Plan
5. Accurate mapping of zones for the site and surrounds, overlaid on the site survey plan;	Volume 2, specifically drawings R.C. 38 and R.C. 39
6. Consideration of any relevant statutory and non-statutory requirements and identification of any non-compliances with such provisions, in particular relevant provisions of Environmental Planning Instruments, Regional Strategies (including draft regional Strategies) and Development Control Plans;	Chapter 4
7. Consideration of impacts, if any, on matters of national environmental significance under the Commonwealth Environment Protection and Biodiversity Conservation Act 1999;	Section 4.1.1 and Section 6.9
8. An environmental risk analysis of the project including consideration of the issues raised during consultation;	Chapter 5
9. An assessment of the potential impacts of the project and a draft Statement of Commitments, outlining environmental management, mitigation and monitoring measures to be implemented to minimise any potential impacts of the project;	Chapters 3, 5, 6, 8 and 9
10. The plans and documents outlined in Attachment 2;	Volume 2
11. A signed statement from the author of the Environmental Assessment certifying that the information contained in the report is neither false nor misleading;	Volume 1A
12. A Quantity Surveyor's certificate of cost to verify the capital investment value of the project; and	Volume 1B Annex O
13. A detailed assessment of the key issues specified below and a table outlining how and where in the EA document these key issues and the above requirements have been addressed.	As detailed below

Key Issue	Relevant Section in the EA Report
Key Issues	
1. Strategic Planning	
<p>1.1 Justify the proposal with reference to relevant local, regional and State planning strategies. Provide justification for any inconsistencies with these planning strategies.</p> <p>1.2 The proposal must demonstrate compliance with the provisions of <i>State Environmental Planning Policy No. 71 – Coastal Protection</i>.</p> <p>1.3 The proposal should not include any elements which would be defined as Canal Estate development as defined in <i>State Environmental Planning Policy No. 50 – Canal Estate Development</i>.</p> <p>1.4 Demonstrate that the proposed densities are appropriate for the future housing needs of the Tea Gardens area. Demonstrate compliance with the recommendations of the <i>Tea Gardens Housing Strategy (May 2006)</i> particularly relating to affordable housing types and their location.</p> <p>1.5 Provision of all development consents issued for the subject site and the adjoining site (known as Myall Quays) including the existing detention lake and connection to the Myall River.</p> <p>1.6 Provision of the Community Management Statement for the existing development adjoining the site, known as Myall Quays.</p>	<p>Chapter 4, Chapter 8</p> <p>Section 4.3, Table 4.2</p> <p>Section 4.3.5</p> <p>Section 4.5.5</p> <p>Volume 1B, Annex B</p> <p>Volume 1B Annex K</p>
2. Subdivision Design, Layout and Desired Future Character	
<p>2.1 Demonstrate the consistency of the proposal with the character of existing development in terms of the locality, street frontage, scale, building envelopes and future built form controls, aesthetics, energy and water efficiency and safety.</p> <p>2.2 Demonstrate the consistency of the proposed subdivision design and layout with the <i>Coastal Design Guidelines for NSW, NSW Coastal Policy 1997</i> and <i>SEPP 71 – Coastal Protection</i>.</p> <p>2.3 A draft community management statement should be provided if community title is proposed.</p> <p>2.4 Provide details of any staging that demonstrates the lots will be released in an orderly and coordinated manner and identify how the proposal relates to the existing and proposed future stages to ensure an integrated and holistic approach to environmental management.</p> <p>2.5 Outline the long-term management and maintenance of any areas of open space or conservation including ownership and control, management and maintenance funding, public access, revegetation and rehabilitation works and bushfire management.</p> <p>2.6 Address any public access to the shoreline in accordance with the principles of ecologically sustainable development and the NSW Coastal Policy.</p> <p>2.7 Address safety and security of the proposal and provide mitigation measures where required.</p> <p>2.8 Demonstrate compliance with relevant zone objectives.</p> <p>2.9 Demonstrate the application of sound urban design principles in the design of the proposal.</p>	<p>Chapter 3</p> <p>Section 4.3.6, Section 4.3.8, Table 4.2</p> <p>Section 3.5, Volume 1B Annex K</p> <p>Section 3.6.</p> <p>Chapter 3, Volume 1B, Annex K</p> <p>Section 3.5.7</p> <p>Chapter 3</p> <p>Section 4.5</p> <p>Chapter 3</p>
3. Visual Impact	
<p>3.1 Demonstrate suitability of the proposal with the surrounding area in relation to the proposed and potential bulk, scale, amenity (including noise) and visual amenity having regard to the <i>Coastal Design Guidelines of NSW (2003)</i>. In particular, address impacts on the amenity of the foreshore, loss of views from public places and cumulative impacts.</p>	<p>Section 6.2, and Annex G of Volume 1B</p>

Key Issue	Relevant Section in the EA Report
4. Infrastructure Provision	
4.1 Address the capacity of existing infrastructure to accommodate the proposed development such as water, electricity, gas, telecommunications and their staging. Specific consideration should be given to the capacity of the sewerage treatment facility at Hawks Nest to accommodate the proposal. Identify and describe staging, if any, of infrastructure works.	Section 6.3 and Volume 5
4.2 In the event that an alternate system is proposed to the effluent management (disposal) system currently proposed, then a risk assessment of effluent disposal, including the potential impacts and relevant mitigation measures in the event of a failure of the effluent disposal system through flood or other events, is to be taken.	Section 6.3 and Volume 5
4.3 Provide details of any Planning Agreements entered into or proposed as part of this development and the proposed payment of Section 94 contributions. Note: Any Planning Agreement must be outlined in the Statement of Commitments as an 'offer' under Section 93G of the Act. This should take the form of a draft agreement. Planning Agreements should only contain matters outside of the scope of Section 94.	Section 3.7.1 and Volume 1B Annex J
4.4 Outline the capacity of the Community Title arrangements to meet the future requirements for infrastructure maintenance and repairs.	Section 3.5
5. Traffic and Access	
5.1 Prepare a Traffic Impact Study in accordance with the RTA's Guide to <i>Traffic Generating Developments</i> .	Section 6.4 and Volume 5.
5.2 Protect existing public access to and along the coastal foreshore and provide, where appropriate, new opportunities for controlled public access. Consider access for the disabled, where appropriate.	Section 3.5.7
5.3 Demonstrate compliance with sound urban design principles, including parking, access, and transport. This must demonstrate options, particularly as they relate to access to and from adjoining urban areas, with a view to minimising traffic loads on one or more particular access way. In addition consideration must be given to: <ul style="list-style-type: none"> • pedestrian/cycle access through the site; • public transport access through the site, with particular emphasis on road compatibility for bus access through the site; • intersection capability to withstand anticipated traffic loads; • a Noise Impact Assessment in accordance with the NSW Environmental protection Authority's 'industrial Noise Policy' (2000) should be completed. This assessment should identify the likely impact of the existing industrial area upon the proposed residential development and if necessary include methods for noise attenuation. <p>With respect to traffic and access, traffic modelling in accordance with the relevant standards is required.</p>	Chapter 3, Section 6.4
5.4 Demonstrate the provision of access and servicing links between the subject site and Shearwater Estate (through the Myall Quays site). Consideration of any alternative access requirements of the <i>Great Lakes Hawks Nest/Tea Gardens Conservation and Development Strategy (2003)</i> is also required.	Section 6.5, Volume 5
6. Hazard Management and Mitigation	
<i>Coastal Processes</i>	Section 6.6.1
6.1 Address coastal hazards and the provisions of the <i>Coastline Management Manual</i> , the NSW Department of Environment Climate Change and Water publications; <i>NSW Sea Level Rise Policy Statement</i> , <i>Coastal Risk Management Guide</i> and <i>Flood Risk Management Guide</i> , and the NSW Department of Planning Publication; <i>NSW Coastal Planning Guidelines: Adapting to Sea Level Rise August 2010</i> . In particular, consider impacts associated with wave and wind action, coastal erosion, sea level rise and more frequent and intense storms in accordance with the principles of ecologically sustainable development and the NSW Coastal Policy.	Section 6.6.1

Key Issue	Relevant Section in the EA Report
<i>Contamination and Acid Sulfate Soils</i>	Section 6.6.2
6.2 Address any existing contamination and required remediation of soils on the site. Particular regard must be given for Acid Sulphate Soils on the site, particularly relating to the excavation of these soils. In addition, address the concerns raised by the PAC regarding the management of Acid Sulphate Soils on site.	Section 6.6.2
<i>Bushfire</i>	Section 6.6.3
6.3 Address the requirements of <i>Planning for Bush Fire Protection 2006</i> , including a Bushfire Plan of Management for all land proposed to be not built on.	Section 6.6.3
<i>Geotechnical</i>	Section 6.6.4
6.4 Provide an assessment of any geotechnical limitations that may occur on the site and if necessary, appropriate design considerations that address these limitations.	Section 6.6.4
<i>Flooding</i>	Section 6.6.1
6.5 Provide an assessment of any flood risk on site (for the full range of floods including events greater than the design flood, up to probable maximum flood; and from coastal inundation, catchment based flooding or a combination of the two) and having consideration of any relevant provisions of the <i>NSW Floodplain Development Manual 2005</i> . The assessment should determine: the flood hazard in the area; address the impact of flooding on the proposed development, address the impact of the development (including filling) on flood behaviour of the site and adjacent lands; and address adequate egress and safety in a flood event. In addition, address the concerns raised by the PAC regarding the assessment of the impact of flooding under climate change scenarios other than 'minor'. 6.6 Assess the potential impacts of sea level rise and an increase in rainfall intensity on the flood regime of the site and adjacent lands with consideration of <i>Practical Consideration of Climate Change - Floodplain Risk Management Guideline (DECC, October 2007)</i> .	Section 6.6.1
7. Water Cycle Management	Section 6.7
7.1 Address potential impacts on the water quality of surface and groundwater, having regard to the relevant State Groundwater, Rivers, Wetlands and Estuary Policies. Consideration must be made for water impacts to the Myall River and identified SEPP 14 Wetlands. Particular regard must be given to how the proposal will minimise altered salinity, pH, litter, weeds, exotic fauna, gross disturbance of these wetlands, and nutrient intake to receiving water bodies, and any other issues raised by the PAC relating to groundwater and groundwater ecosystems. 7.2 An Integrated Water Cycle Management (IWCM) Plan based upon Water Sensitive Urban Design principles is required. This must address the requirements of the <i>NSW Floodplain Management Manual</i> , water supply, stormwater, sewage, recycling of effluent in an integrated manner, together with further consideration of the STP capacity and consequent infrastructure staging considerations, in consultation with MidCoast Water and DECCW, and must also address the possible inclusion of a reticulated recycled water supply with the IWCM for the development. 7.3 The following impacts are to be assessed for any stormwater management system proposed which involves no extension to the existing lake and no new excavation below the water table: the impact of any large amount of fill material on flooding, fauna and flora; and consideration of the use of recycled water, using nutrient loads based on actual discharges from the Hawkes Nest STP, and a worst case assumption of some level of fertilizer use by residents in addition to recycled water. 7.4 Stormwater management should be designed to ensure ongoing protection of the groundwater aquifer in accordance with the principles of ANZECC & ARMCANZ: <i>Guidelines for Groundwater Protection in Australia, National Water Quality Management Strategy, Commonwealth of Australia, 1995</i> . Ensure there is no impact on the existing groundwater aquifer and existing groundwater quality resulting from the proposal. Suitably justify the stormwater treatment measures to be used in the proposal. 7.5 A Wetland Management Plan is required to guide the rational conservation, management, and restoration of the SEPP 14 wetland habitats and their buffers.	Section 6.7 and Volume 3

Key Issue	Relevant Section in the EA Report
7.6 Details of any proposed dredging and reclamation activities including the methods, uses, timing, extent, and duration of works, nature of sediment to be dredged, etc. Specific detail must be provided to outline any activities that may harm marine vegetation, or block the passage of aquatic fauna.	
8. Heritage and Archaeology	Section 6.8
8.1 An Independent Archaeology report must be included in the Environmental Assessment. This must address and document information requirements set out in the draft Guidelines for Aboriginal Cultural Heritage Impact Assessment and Community Consultation (DEC 2005) and <i>Interim Community Consultation Requirements for Applicants</i> (DEC 2004). 8.2 Consideration and assessment of the following recommendations of the PAC: provision of further details to confirm the adequacy of the buffer area to protect this site; the impacts to this site as a result of signage and interpretation for use as an educational resource, in consultation with DECCW and the KLALC; and, clarification of the commitment or otherwise for the KLALC to monitor construction activities and the mechanism to achieve long term protection of any keeping place established as part of this process.	Section 6.8. Volume 5
9. Flora and Fauna	Section 6.9
9.1 Provision of accurate and comprehensive baseline ecological data as described in section 2.6 of the PAC report. 9.2 Address the deficiencies in the previous ecological assessment identified in section 2.7 of the PAC report. 9.3 Outline measures for the conservation of existing wildlife corridor values and/or connective importance of any vegetation on the subject land. 9.4 Address measures to protect and manage the SEPP 14 wetland and adjacent aquatic habitats. 9.5 Outline and document commercial, recreational, and indigenous fishing activities that may be affected by the proposal. Investigation is required into whether the proposal will impact on the continuing operation and viability of nearby aquaculture or marine culture ventures. 9.6 Demonstrate that any water discharge shall meet the benchmark set under the <i>Oyster Industry Sustainable Aquaculture Strategy</i> . 9.7 Outline measures for the conservation of flora and fauna and their habitats within the meaning of the <i>Threatened Species Conservation Act 1995</i> , <i>Native Vegetation Act, 2003</i> , and the <i>Fisheries Management Act, 1994</i> including, but not limited to Koala populations, and other EECs. 9.8 The EA must consider how the proposal has been managed to conserve flora and fauna habitats on the subject site and subject area. The measures proposed to mitigate any effects of the proposal must be provided, including any long term strategies to protect areas within the study area with threatened species. This may include elements that restore or improve habitats. Pre-construction monitoring plans or on-going monitoring of the effectiveness of the mitigation measures must be outlined in detail. 9.9 Prepare a details flora and fauna assessment for any proposed off-site offset area to enable an adequate assessment to be made of its ecological value and the adequacy of the proposed offset, taking account of <i>'Principles for use of Biodiversity Offsets in NSW'</i> . (Note that the PAC concluded that offsets are not appropriate for some areas to ensure that values are protected.)	Chapter 8, Section 6.9, Volume 4
10. Socio-economic Impacts	Section 6.10
10.1 Address social infrastructure including health services and schools. Consultation with service providers, Council, Department of Health, and Department of Education is required. Provide evidence of the capacity to service the proposed development and expected growth in the locality.	Section 6.10

Key Issue	Relevant Section in the EA Report
Consultation	Chapter 7
<p>You should undertake an appropriate and justified level of consultation with the following agencies during the preparation of the environmental assessment:</p> <p>(a) <i>Agencies or other authorities:</i></p> <ul style="list-style-type: none"> • Great Lakes Shire Council; • Department of Environment and Climate Change; • Department of Primary Industries (Fisheries); • NSW Rural Fire Service; • Department of Water and Energy; • NSW Maritime; • Department of Lands; • NSW Police Service; • State Emergency Service; • Hunter & Central Rivers Catchment Management Authority; • Port Stephens-Great Lakes Marine Parks Authority; • Local Aboriginal Land Council/s and other Aboriginal community groups; and • MidCoast Water. <p>(b) <i>Public:</i></p> <p>Document all community consultation undertaken to date or discuss the proposed strategy for undertaking community consultation. This should include any contingencies for addressing any issues arising from the community consultation and an effective communications strategy.</p> <p>The consultation process and the issues raised should be described in the Environmental Assessment</p>	Chapter 7

This chapter details the site analysis and further justification for the Concept Plan. It then describes what is proposed under the Concept Plan and discusses the principles informing the design as well as proposed staging and Community Title arrangements.

3.1

SITE ANALYSIS

The site is located to the north of the existing residential area of Tea Gardens as illustrated in *Figure 1.1* and *Figure 1.2*. It represents a natural extension to the existing residential area of Tea Gardens and will provide a series of walking trails and public open space which connect the two areas.

The design and layout of the Riverside estate has been revised given the issues raised by the PAC, as well as determined through an overlaying process of mapping opportunities and constraints to determine the overall building envelope and the open space network.

Specifically the following additional work has been undertaken to clarify the constraints affecting the site and address concerns raised by the PAC:

- accurate identification and mapping of all vegetation communities on the site;
- accurate identification and mapping of all endangered ecological communities on site; and
- accurate identification and mapping of habitats, including movement habitat, of all threatened fauna species known or likely to use the site.

The aim of the mapping exercise was to maximise benefits for future residents of, and visitors to Riverside while protecting areas of environmental sensitivity. The elements that guided the formulation of the design include:

- the surrounding wetland;
- visual impact and vistas from key vantage points;
- the integration of adjoining developed areas;
- traffic and access considerations;
- the stand of mature vegetation to the north of the site;
- the topography of the land and the existing drainage network; and
- areas of cultural significance.

Figure 3.1 and Figure 3.2 illustrate key constraints and site analysis of the site. The constraints map and site analysis plan identify ecological habitats and values and other features within the site in relation to the proposed development footprint.

It should be noted that the revised biodiversity mapping identified much of the mosaic of vegetation types across the site (particularly in the west) as falling into the floristic make up of communities which are consistent with the categorisation of Swamp Sclerophyll Forest EEC. Consideration of the full extent of the distribution of these EECs has been considered in accordance with the Scientific Committees Determination as directed by the PAC, by reference to the soil profiles provided in a specialist soils report prepared by Whitehead and Associates (2011).

The soils report focussed on identifying soils required for EEC designation in accordance with the definitions contained within the final determinations of the NSW Scientific Committee, as well as recent rulings by the NSW Land and Environment Court.

Following observation and laboratory analysis, Whitehead and Associates concluded that the Riverside site consisted of defined areas of marine (beach barrier), Aeolian and erosion origin soil landscapes and that :

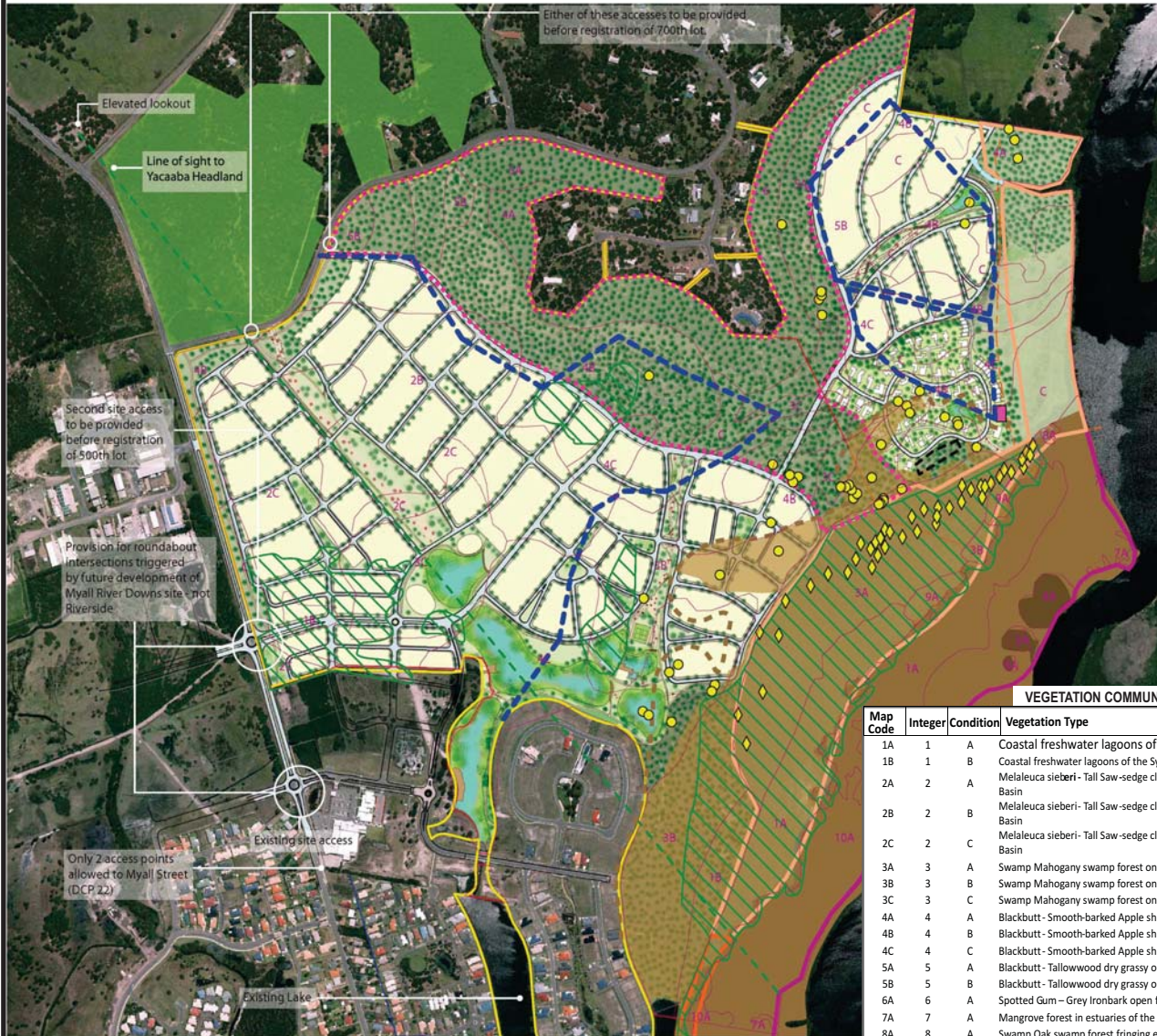
“The southern and eastern part of the site comprises sandy soils of marine (beach barrier) or aeolian origin (Tea Gardens soil landscape). This soil landscape does not meet the conditions for the Swamp Sclerophyll Floodplain Forest EEC.

The northern section of the site comprises clay and clay loam soils of erosional origin (Pindimar Road soil landscape) Soils of an erosional nature would not meet the edaphic and locational conditions for the Swamp Sclerophyll Floodplain Forest EEC.

The northwest portion of the site comprises sandy loam formed under estuarine conditions on a drained Holocene estuarine flat on a coastal sand plain (Bob’s Farm Soil Landscape). While the soils of this area have edaphic characteristics that meet the Swamp Sclerophyll Floodplain Forest EEC definition and this area is waterlogged at times the soils represent those of a distinctly different depositional setting to an alluvial environment.”

Based on the soils assessment by Whitehead and Associates (2011) and recent Land and Environment Court decisions Swamp Sclerophyll Forest is not considered as occurring above the 1- in-100 year flood line and this is reflected in the constraints plan. The EEC status of vegetation types does not affect the number or type of ecosystem credits required to be purchased and retired to offset the impacts of the proposed development.

The proposed development has been designed having regard to ecologically sensitive areas. The less disturbed vegetation communities (Wetland Fringing Woodland and Forests, Wetlands) with higher habitat values are afforded a higher level of retention and protection. The development will require the removal or modification of proportions of threatened species habitats within the more disturbed terrestrial open forest and woodland communities.



VEGETATION COMMUNITIES AND FLORA SURVEY LOCATIONS

Map Code	Integer	Condition	Vegetation Type	Condition
1A	1	A	Coastal freshwater lagoons of the Sydney Basin and South East Corner	Mod/Good/Good
1B	1	B	Coastal freshwater lagoons of the Sydney Basin and South East Corner	Mod/Good/Mod
2A	2	A	Melaleuca sieberi - Tall Saw-sedge closed shrubland in drainage lines on the Central Coast, Sydney Basin	Mod/Good/Good
2B	2	B	Melaleuca sieberi - Tall Saw-sedge closed shrubland in drainage lines on the Central Coast, Sydney Basin	Mod/Good/Mod
2C	2	C	Melaleuca sieberi - Tall Saw-sedge closed shrubland in drainage lines on the Central Coast, Sydney Basin	Low
3A	3	A	Swamp Mahogany swamp forest on coastal lowlands of the North Coast and northern Sydney Basin	Mod/Good/Good
3B	3	B	Swamp Mahogany swamp forest on coastal lowlands of the North Coast and northern Sydney Basin	Mod/Good/Mod
3C	3	C	Swamp Mahogany swamp forest on coastal lowlands of the North Coast and northern Sydney Basin	Low
4A	4	A	Blackbutt - Smooth-barked Apple shrubby open forest on coastal sands of the southern North Coast	Mod/Good/Good
4B	4	B	Blackbutt - Smooth-barked Apple shrubby open forest on coastal sands of the southern North Coast	Mod/Good/Mod
4C	4	C	Blackbutt - Smooth-barked Apple shrubby open forest on coastal sands of the southern North Coast	Low
5A	5	A	Blackbutt - Tallowood dry grassy open forest of the southern North Coast	Mod/Good/Good
5B	5	B	Blackbutt - Tallowood dry grassy open forest of the southern North Coast	Mod/Good/Mod
6A	6	A	Spotted Gum - Grey Ironbark open forest on the foothills of the Central Coast, Sydney Basin	Mod/Good/Good
7A	7	A	Mangrove forest in estuaries of the Sydney Basin and South East Corner	Mod/Good/Good
8A	8	A	Swamp Oak swamp forest fringing estuaries, Sydney Basin and South East Corner	Mod/Good/Good
9A	9	A	Paperbark swamp forest of the coastal lowlands of the North Coast and Sydney Basin	Mod/Good/Good
10A	10	A	Saltmarsh in estuaries of the Sydney Basin and South East Corner	Mod/Good/Good

- Legend**
- Extent of Concept Plan
 - 7A Lands
 - 7B Lands
 - DCP Buffer
 - 2.1m AHD Contour
 - Recommended PAC Urban Footprint
 - Proposed Actual Green Buffer
 - Council Reserve
 - Designated Water Course
 - Location of Unknown Midden
 - Coastal Saltmarsh
 - Swamp Oakforest
 - Swamp Sclerophyll Forest
 - Wallum Froglet Habitat
 - Existing Residence
 - Surveyed Hollowing Bearing Tree Locations
 - ◆ Approximate Identified Hollowing Bearing Tree Locations

Source:
 Crighton Properties - Constraints Plan R.C. - 36
 January 2012 Rev O

Suffix	Revisions	Date	Init
R0	Preliminary Issue	11-01-12	JD

Figure 3.1
Constraints Plan

Client: Crighton Properties Pty Ltd
 Project: Concept Plan 2011
 Environmental Assessment
 Riverside at Tea Gardens

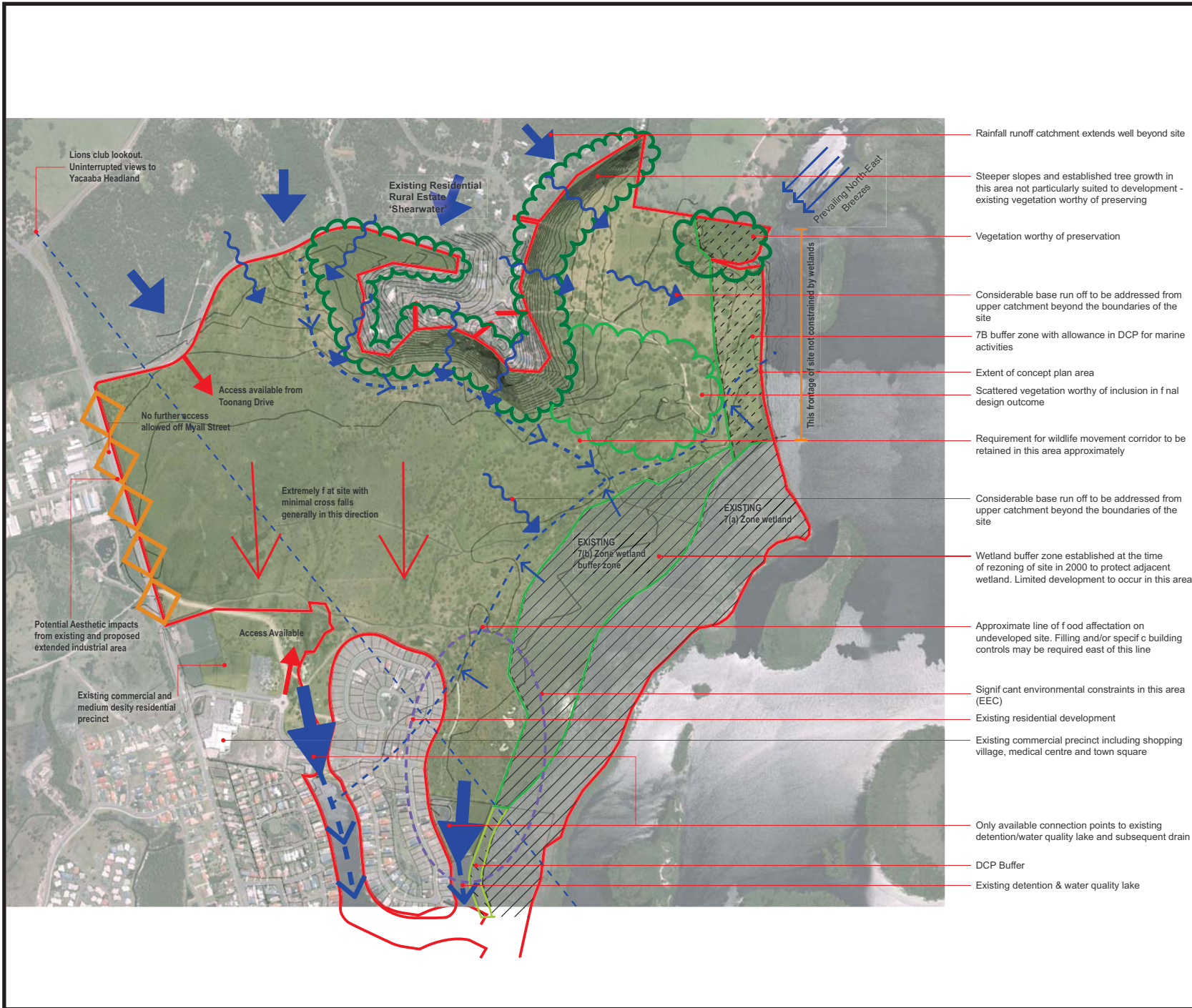
Drawing No: 0043707h_CP_EA_11_C006_R2.cdr
 Date: 11/01/2012 Drawing size: A4
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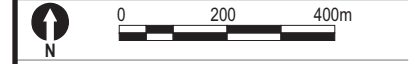
Legend
 Riverside at Tea Gardens Site Boundary

Source:
 Crighton Properties - Context Plan R.C.- 02 November 2011 Rev: N

Suffix	Revisions	Date	Init
R0	Preliminary Issue	05-12-11	JD

Figure 3.2
Site Analysis Plan

Client: Crighton Properties Pty Ltd
 Project: Concept Plan 2011 Environmental Assessment Riverside at Tea Gardens
 Drawing No: 0043707h_CP_EA_11_C007_R0.cdr
 Date: 05/12/2011 Drawing size: A4
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3.2 CONCEPT PLAN

3.2.1 Description

Concept Plan approval is sought for the following (refer to *Figure 2.1*):

- residential development of the site which will include the potential to create approximately 920 dwellings as detailed in *Table 3.1*;

Table 3.1 *Development Types*

Development	Number of Dwellings
Residential (variety of lots)	855
Tourist Precinct - lodges	50
Tourist Precinct - houses	15
Total	920

- a 67.1 hectare residential precinct (including roads and community facilities);
- an 8.1 hectare tourist/recreational precinct (including a conference centre and accommodation) in the north east portion of the site;
- water sensitive urban design (WSUD) measures including the retention of the existing saltwater basin and single drain outlet to the Myall River, the creation of a range of new primary (separated from the watertable) and secondary (recharge) water quality management devices;
- a residentially zoned open space network comprising 92.1 hectares in total which provides for public recreation, stormwater management, a wildlife corridor, and clubhouses and community facilities, broken down into the following:
 - approximately 41.9 hectares of the Residential 2(f) zoned land are proposed to be protected and enhanced as wildlife movement corridors, over and above those already protected within the Environmental Protection 7(a) and 7(b) zones (which comprise 28.4 and 20.6 hectares respectively);
 - an additional 17.8 hectare conservation buffer including 12.3 hectares to the 7(b) zone in the south east and 5.5 hectares in the north east is to be protected;
 - approximately 23.1 hectares of drainage reserves and large parks is also proposed and will remain as managed open space;
 - 2.6 hectares of pocket parks;
 - 6.7 hectare existing detention and water quality management lake;

- upgrading of intersections and associated road works and other construction works (such as cycleways) external to the site;
- access from Toonang Drive and Myall Street;
- an internal road network; and
- associated landscaping and infrastructure works.

Substantial areas of the Residential 2(f) zoned land are proposed to be protected and enhanced as open space / wildlife movement corridors, over and above those already protected within the Environmental Protection 7(a) and 7(b) zones. The draft Statement of Commitments contained in *Chapter 9* preposes rezoning of some of these areas for additional protection.

3.2.2 *Home Based Business Lots*

The concept of the *home based business* lots is based on emphasising the nexus between home and work as a means of enhancing quality of life and choice of occupation. It has been recognised that a number of new jobs being created in western democracies are being created by micro enterprises and self employed people, which provides for new ways in which we live and work (Sirolli, 2007). In particular it has manifested in the growth of home based businesses. In Australia there are one million people that conduct business from their place of residence, which is slightly less than 50 per cent of all Australian businesses (Sirolli, 2007). It is one of the fastest growing sectors of the economy, which is facilitated by communication and technological advancements, such as the internet, and a quality of life decision to start a business (Sirolli, 2007).

Home based business lots are proposed on 37 lots located within the south-west portion of the site, at the Myall Road entrance to the development. These lots will provide for home based businesses with an employment base of up to two people that are not residents of the house. This will facilitate newly developing businesses to establish themselves. The *home based business* lots are detailed in *Table 3.2*.

Table 3.2 *Home Based Business Lots*

Size of Lots (square metres)	Number of Dwellings
451 - 550	16
551 - 650	18
651+	3
<i>Sub Total</i>	37

The *home based business* lots in the overall residential subdivision will create an environment that supports new businesses and provides a place where people can live, work and recreate. The precinct will have a technology/ community

meeting place that incorporates, meeting rooms and facilities to be accessible to all residents of the *home based business* lots.

The intention of the home based business lots is consistent with the definition of '*home business*' in the *Standard Instrument (Local Environmental Plans) Order 2006 (Standard LEP)*. In the Standard LEP home business "...means a business carried on in a dwelling, or in a building ancillary to a dwelling, by one or more permanent residents of the dwelling that does not involve:

- (a) *the employment of more than 2 persons other than those residents, or*
- (b) *interference with the amenity of the neighbourhood by reason of the emission of noise, vibration, smell, fumes, smoke, vapour, steam, soot, ash, dust, waste water, waste products, grit or oil, traffic generation or otherwise, or*
- (c) *involve the exposure to view, from any adjacent premises or from any public place, of any unsightly matter, or*
- (d) *the exhibition of any notice, advertisement or sign (other than a notice, advertisement or sign exhibited on that dwelling to indicate the name of the resident and the business carried on in the dwelling), or*
- (e) *the sale of items (whether goods or materials), or the exposure or offer for sale of items, by retail, except for goods produced at the dwelling or building, or*
- (f) *the use of more than [insert number] square metres of floor area to carry on the business, but does not include bed and breakfast accommodation, home occupation (sex services) or sex services premises".*

It also allows for *home industry* as set out in the Standard LEP. Home industry "*means a light industry carried on in a dwelling, or in a building ancillary to a dwelling, by one or more permanent residents of the dwelling that does not involve:*

- (a) *the employment of more than 2 persons other than those residents, or*
- (b) *interference with the amenity of the neighbourhood by reason of the emission of noise, vibration, smell, fumes, smoke, vapour, steam, soot, ash, dust, waste water, waste products, grit or oil, traffic generation or otherwise, or*
- (c) *the exposure to view, from any adjacent premises or from any public place, of any unsightly matter, or*
- (d) *the exhibition of any notice, advertisement or sign (other than a notice, advertisement or sign exhibited on that dwelling to indicate the name of the resident and the light industry carried on in the dwelling), or*
- (e) *the sale of items (whether goods or materials), or the exposure or offer for sale of items, by retail, except for goods produced at the dwelling or building, or*
- (f) *the use of more than [insert number] square metres of floor area to carry on the light industry, but does not include bed and breakfast accommodation or sex services premises".*

Whilst such uses are permissible on any lot throughout the Riverside site (and would be encouraged) these lots have the added specific advantage of:

- collector road frontage;
- rear lane access;
- close proximity to the growing commercial centre; and
- close proximity to a future small business support hub.

3.3 *DEVELOPMENT OPTIONS*

As part of the environmental assessment of the proposed development consideration has been given to the likely effects of a number of development options for the site including their potential impacts and benefits. These options included:

- a do nothing option;
- Residential and Golf Course Development ;
- Residential, Commercial and Tourist Development;
- Development within the PAC suggested developable area footprint;
- The current Concept Plan; and
- Development including various water management schemes.

3.3.1 *Do Nothing Option*

The do-nothing option would result in the Riverside at Tea Gardens site not being developed for residential and tourist purposes and the existing rural use of the land would be likely to continue.

The Mid-North Coast Regional Strategy (referred to as the Strategy) identifies a minimum housing demand of 59,600 new dwellings by 2031 to accommodate the forecast population increase of 94,000. Minimum dwelling requirements for the Manning Valley - Great Lakes subregion detailed in the Strategy are 15,000 dwellings. Riverside at Tea Gardens is identified as a growth area in the Strategy and is currently zoned 2(f) Mixed Residential / Commercial.

The Strategy identifies key areas for future urban growth throughout the Mid-North Coast, including the Great Lakes local government area (LGA), to accommodate the projected population in the region. A number of the proposed future urban release sites identified within the Strategy have significant issues affecting their future viability and the achievement of their

notional yields. Identified urban growth areas in the Great Lakes LGA, and potential constraints to the development of such lands are outlined below.

Tea Gardens:

- Riverside at Tea Gardens is identified within the strategy as a growth area and is currently zoned 2(f) Mixed Residential / Commercial;
 - the proposed Myall River Downs site to the west of the Myall Way is identified as a proposed future urban release area; and
 - the proposed North Shearwater development area to the north of the existing Shearwater rural residential estate is identified as a proposed future urban release area.
- A Local Environmental Study (LES) was prepared by Geolink (2009) on behalf of Great Lakes Council to accompany a draft Local Environmental Plan (LEP) for the North Shearwater site. The purpose of the LES was to assess the capability and suitability of the land for a range of land uses including residential, tourism, open space, recreation and environmental protection. The LES was exhibited from 9 April to 15 May 2009 and adopted by Great Lakes Council in July 2009.
 - The LES designated an area for residential, tourist and commercial uses covering approximately 50% of the total site area, reflecting the requirement to retain a large proportion of the site for purposes other than urban development due to various environmental, engineering and planning constraints.

Hawks Nest:

- an urban growth area is identified in Hawks Nest;
- the North Hawks Nest development area to the north of the existing Hawks Nest township is identified as a proposed future urban release area, however the site is considered to contain high level constraints in the Strategy, including:
 - the extent of development is subject to completion of environmental and urban capability assessments which address the findings and recommendations of the 2001 Commission of Inquiry report for the site; and
 - the extent of development potential will be subject to resolution of an appropriate environmental offset allowing the transfer of a major part of the site to create an effective extension of the Myall Lakes National Park and a legally enforceable mechanism for the transfer of the land to the conservation reserve.

Smith Lakes:

An urban growth area is identified in Smiths Lakes. A Local Environmental Study was prepared by Great Lakes Council (2010) which identified four key environmental features that constrain development within the Smiths Lakes urban growth area, being the presence of high conservation value vegetation and habitat; the management of water quality in the freshwater lagoon, and a suitable interface between private and public land use on the foreshore of Smiths Lake and emergency bushfire access/egress. Of the total 42 hectares available across the site, only 9.5 hectares was identified in the LES as being suitable for development.

Karuah:

An urban growth and proposed future urban release area are identified for Karuah, however, as identified in the Strategy, the North Karuah future urban release area is considered to have significant issues affecting its development potential. The Strategy identifies that the extent of the development potential in Karuah is to be based on joint strategic planning undertaken by both Port Stephens and Great Lakes Councils to address the wider extent and footprint of development and infrastructure provision in the Karuah locality.

Bulahdelah:

An urban growth area and proposed future urban release areas are identified for Bulahdelah, including the proposed Bulahdelah Golf Course 200 dwelling / tourist development and accompanying golf course expansion. The strategy identifies significant issues affecting the Bulahdelah Golf Course development potential, with the extent of development to be based on the completion of environmental and urban capability assessments including land capability, identification and protection of high conservation values and protection of any current or proposed Aboriginal places.

Forster / Tuncurry:

Area of urban growth and proposed future urban release areas are identified for Forster / Tuncurry, however the development potential of North Tuncurry is subject to the resolution of significant issues associated with significant environmental hazards and therefore the extent of development potential that may exist is likely to be significantly reduced.

The various issues affecting many of the proposed future urban release areas, including ecological or other constraints, as identified in the Strategy and summarised in the preceding pages is likely to prevent achievement of their notional yields. As the Mid-North Coast Regional Strategy identifies minimum dwelling requirements for the Manning Valley – Great Lakes subregion of 15,000 dwellings, urban development within development footprints not ecologically or otherwise constrained is paramount to meeting the minimum dwelling requirements and being able to accommodate the projected population growth in the region.

The do-nothing option would result in the development potential of 920 dwellings within the site not being realised and thus place further pressure on the achievement of the minimum dwelling requirements identified in the Strategy.

The do-nothing option would also result in the economic benefits of the proposal not being realised. *Table 3.3* illustrates the estimated local economic impact as a result of the construction and operational phases of the proposal.

Table 3.3 *Estimated Local Economic Impact*

Estimated Local Economic Impact			
Economic activity	Economic value (millions)	Employment (EFT)	Output (millions)
Construction	\$256.1	1,557	\$96.1
Sales and marketing	\$0.4	8	\$0.2
Operation of the Estate (p.a.)	\$0.6	10	\$0.3
Residential Activity (p.a.)	\$33.2	113	\$19.0
Associated activities (p.a.)	\$2.8	53	\$0.6

1. Parsons Brinkerhoff, November 2010

The proposal will provide allotments that could accommodate a variety of dwelling types, which would appeal to a range of household types. The do-nothing option will result in the current lack of diversity in dwelling types and housing choice in Tea Gardens continuing for an undefined period.

3.3.2 *Residential and Golf Course Development*

In 2002 Crighton Properties began the process of seeking approval to develop a substantial portion of the Riverside site for residential purposes in association with a nine hole golf course and tourist facilities. This proposal was developed in accordance with the Great Lakes Council Myall Quays - Eco Village Development Control Plan. *Figure 3.3* identifies the DCP vision and other development alternatives.

The above proposal involved the extension of the Myall Quays development including additional housing, commercial, sporting and tourist facilities on the remaining 179 ha of the site. The proposal included additional stormwater detention basins and state of the art rainwater harvesting strategies to support water reuse by approximately 600 new residential lots as well as a nine hole golf course.

The Tea Gardens and Hawks Nest urban areas at the time of the Myall Quays Local Environmental Study (1991) had the capacity to accommodate about 1,300 and 600 new residential lots respectively. It was determined that the Riverside site could accommodate about 1,000 dwellings together with tourist developments, which would represent a significant development element in the local context. The identification of additional urban development potential saw the proposal redesigned in 2003 to better represent the local

context, changing trends and state of the art residential design initiatives in the Tea Gardens/ Hawks Nest area. Three (3) major factors were identified which lead to the original proposal being modified:

Existing Infrastructure

Hawks Nest had an 18 hole golf course and there was a new nine hole golf course proposed in North Hawks Nest. Therefore there was likely to be little or no demand for a new nine hole golf course at Riverside, Tea Gardens.

Planning Context

The Department of Planning (DoP) identified that the local context of the Tea Gardens/ Hawks Nest area had changed significantly since the initial proposal and residential land was identified as being in short supply. The proposed use of residential land for a nine hole golf course as close as 100 metres of a proposed district shopping centre was seen as an inefficient use of residential land. The resultant low density residential development was not considered in the local community's best interests.

Whilst this redesign process was being undertaken, Great Lakes Council released a housing strategy which identified a new housing density requirement in order to address the demand for housing within the area. A residential density of 13 dwellings per hectare for new residential areas was subsequently established for all future developments. Given that approximately 300 lots had already been developed from the site, the residual (600) residential dwellings and a golf course would not have met the residential density requirement stipulated by Council. The proposal was amended and now achieves the required residential densities.

Environmental Constraints

The proposed golf course would have been a heavy user of water resources. This significant use of water was not seen as the most appropriate use of local resources nor was it seen as presenting an environmentally appropriate outcome for the local area. The golf course would have also required the use of chemicals and pesticides to maintain the course to an acceptable standard. The location of a golf course in such close proximity to Myall River, the adjoining SEPP 14 Wetlands, and the existing artificial lake (within the Myall Quay's precinct on the site) would have increased the risk of chemicals and pesticides used on the golf course entering the water treatment system. It was therefore determined that an alternative design was required which provided a more appropriate response to the environmental context of the local area.

Development Control Plan

The DCP gazetted in 2000 identifies the following precincts:

Local Business Precinct

Local business precinct and tourist centre.

Residential Precinct A

Residential Area

Residential Precinct B

30m wide bushland corridor along Myall Road to screen residential development but allowing views to parkland and recreation areas.

Freshwater lakes managed for water treatment and aesthetic purposes.

Lots to have recreational area, parkland, bushland or lake views.

Residential / recreation area with a maximum of 18ha developed as residential net site area.

Landscaped in accordance with a landscape masterplan with endemic species to maintain a natural corridor between bushland west of the Myall River.

To provide a 100 m wide east / west wildlife movement corridor.

Residential Precinct C

Mixed residential, business and community uses area to extend tourist business and services but not retail uses beyond convenience centre.

Community facilities site with no direct access from Myall Road (minimum area 1,500 m²).

Major vehicular access.

Service station site.

Existing pony club to be relocated to a site west of Myall Road, with this area to be set aside and developed for recreational purposes including sporting fields and court development.

Minor vehicular access from Toonang Drive.

Maintain bushland links to adjoining bushland reserves.

Maintain pedestrian access between existing rural residential estate and project site.

Tourist accommodation with environmental theme.

Wetland Buffer Precinct

Wetland buffer area managed to protect the SEPP 14 wetland from adverse impacts from development and for recreation uses compatible with the primary function, including detention ponds and water quality treatment systems.

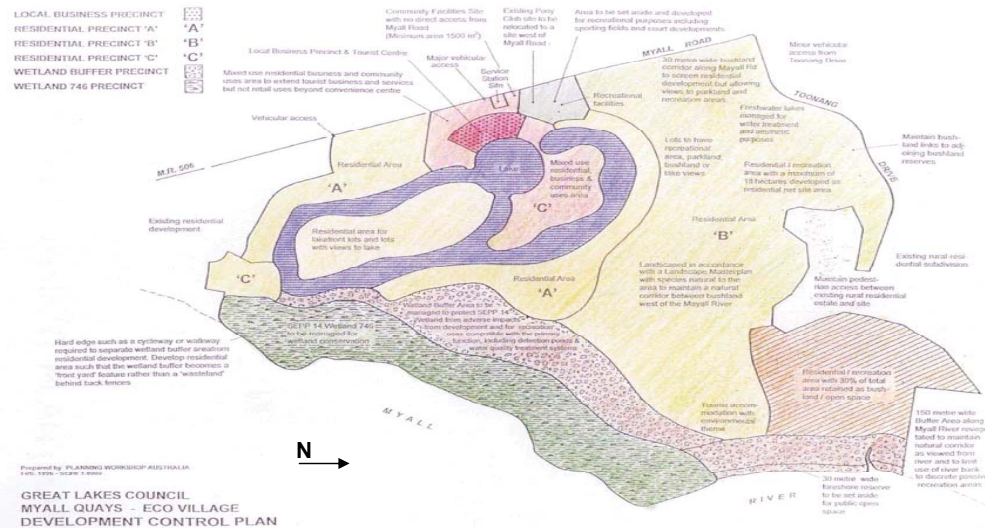
30m wide foreshore reserve to be set aside for public open space.

Cycleway or walkway to separate buffer from residential area.

Wetland 746 Precinct

SEPP 14 wetland 746 to be managed for wetland conservation.

The two DCP maps opposite depict the project location and a comparison of the latest and original can be made.



Source:

Crighton Properties Pty Ltd

Suffix	Revisions	Date	Init
R0	Preliminary Issue	06-12-11	JD

Figure 3.3

Great Lakes Council-Myall Quays Eco Village Development Control Plan Precinct and Alternative Residential

Client: Crighton Properties Pty Ltd

Project: Concept Plan 2011
Environmental Assessment
Riverside at Tea Gardens

Drawing No: 0043707h_CP_EA_11_C017_R0.cdr

Date: 06/12/2011 Drawing size: A4

Drawn by: JD Reviewed by: SO'C

Scale: Not to Scale



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3.3.3

Residential, Commercial And Tourist Development

In January 2009, Crighton Properties lodged a Concept Plan and Project Application with the Department of Planning under Part 3A of the EP&A Act for a mixed use residential, commercial and tourist development across the Riverside site. The key components of the project were:

Concept Plan:

- an extension of the existing town centre on the north side of Shoreline Drive, to accommodate a range of uses (subject to future applications) including additional retail and commercial uses (approximately 4 hectares);
- residential development of the site (covering approximately 84 hectares), including a variety of lots, access from Toonang Drive and Myall Street;
- water sensitive urban design (WSUD) measures including a two hectare extension of the existing detention lake and the creation of three new freshwater detention basins and numerous additional ponds surrounded by parklands and extension of an existing channel which is connected to the Myall River to link the detention lake to the Myall River to enhance water quality management ;
- an open space network comprising 127 hectares in total which provides for public recreation, stormwater management, a wildlife corridor, conservation areas, and community facilities;
- an 8 hectare tourist/residential development (including a conference centre and accommodation);
- a residential subdivision in the north east portion of the site, together with a foreshore park of 5.6 hectares;
- clubhouse facilities and associated tennis courts, active and passive open spaces, pool and BBQ facilities; and
- associated landscaping and infrastructure works.

Project Application:

- Project approval was sought for Stages 1, 2, 3, 4, 5, 6, 7, 8 and 9;
- roadways and associated infrastructure throughout the proposed commercial area (no buildings were proposed in the commercial precinct as part of the Project Application);
- water sensitive urban design measures (WSUD) including a two hectare extension of the existing detention lake, the creation of three (3) new freshwater detention basins and numerous additional ponds surrounded by parklands and open space and the extension of an existing drainage channel which is connected to the Myall River to link it to the detention

lake to enhance water quality management within the proposed development;

- construction of a new connection to Myall Street for vehicle access and construction of internal roads and cycleways;
- construction of a community clubhouse and associated tennis courts, active and passive open spaces, pool and BBQ facilities;
- the provision of buffer (21 hectares) to the wetlands (zoned 7(b) Conservation);
- the retention of approximately 28 hectares of wetlands zoned 7(a) Wetlands and Littoral Rainforest; and
- associated landscaping and infrastructure works

The Department of Planning appointed an Independent Hearing and Assessment Panel, later modified to a Planning and Assessment Panel (PAC) to undertake an independent assessment of key aspects of the project, principally focussed on the likely hydrological and ecological impacts. The PAC raised a number of issues in respect to the project, including key concerns regarding the adequacy of vegetation mapping, identification of endangered ecological communities, habitat assessment, groundwater modelling, the proposed stormwater management regime, flooding and impacts on the adjacent SEPP 14 wetland (as detailed further in *Chapter 8*). The Concept Plan and Project Application was withdrawn prior to the Minister's determination so that the issues raised by the PAC and relevant government agencies could be further addressed (refer to *Chapter 8*).

3.3.4

Development contained within the PAC Suggested Developable Area Footprint

This EA responds directly to the issues raised by the PAC. New and updated environmental assessments include new biodiversity mapping report by Cumberland Ecology (2011) which incorporates a soils assessment by Whitehead and associates (2011), a biodiversity BioBanking assessment by GHD (2012) and an updated Integrated Water Cycle Management Strategy by Cardno (2011) that includes an updated Preliminary Hydrogeological Study and Concept Groundwater Management Plan by Martins (2011), and an Integrated Water Cycle Management Strategy and Sewerage Servicing by Worley Parsons (2010). These updated studies have led to an improved understanding of the site constraints.

Better quality constraints mapping than that which the PAC previously had access to has confirmed that impacts would be reduced and an improved environmental outcome achieved by:

- removing development previously proposed in the southern corner of the site and adding these lands to proposed conservation lands;

- reducing the development scale in the north eastern corner of the site and providing additional lands for conservation; and
- increasing the east-west corridor to a minimum width of 200 m throughout.

The BioBanking credit calculator was applied to development within the PAC footprint. It was found that the proposed PAC development footprint would also require significant biodiversity offsets (80% of the total biodiversity credits required for the proposed development footprint), with up to an estimated of 270 ha required to be secured off site. The BioBanking assessment has shown that the PAC footprint does not necessarily conserve the highest conservation values on site and that the PAC footprint also requires significant biodiversity offsets.

3.3.5 *Current Proposed Residential and Tourist Development*

Following the withdrawal of the mixed use residential, commercial and tourist development, additional ecological and hydrological assessments were undertaken to address the issues raised by the PAC and relevant government agencies (refer to Chapter 8). The proposed development of Riverside was subsequently modified to the current proposed Concept Plan (refer to *Figure 2.1*) in response to the issues raised by the PAC and the DP&I and as a result of the findings of the additional investigations. Key changes to the development include:

- A commitment to the biodiversity offset strategy;
- the proposed 4 hectare expansion of the existing commercial area has been removed from the Concept Plan;
- the former Precinct 1 which included 71 lots previously located in the south east portion of the site has been deleted and will now become part of the conservation area;
- residential lots have retreated by a further 54 from the north west portion (which will allow a larger open space corridor in this area). The overall number of lots has been reduced from approximately 1040 to 920;
- removal of the foreshore park (5.6ha) to additional land proposed for conservation;
- more 'dry' water management devices (not in contact with the groundwater table) are proposed and the number of detention ponds has been reduced. There will be no link between the saltwater and freshwater basins and the single existing outlet to the Myall River will not be upgraded or duplicated as previously proposed;

- a new Integrated Water Cycle Management Strategy (refer to *Volume 3*) has been prepared to ensure servicing of the development and has the support of MidCoast Water; and
- the Ecological Assessment (refer to *Volume 4*) of the site has been completely revised in accordance with OEH guidelines by a newly appointed consultant.

3.3.6 *Water Management Options*

A number of studies on surface water and groundwater issues for the Riverside site have been previously undertaken (refer to *Volume 3*).

Cardno (2004) undertook an assessment of existing and future catchment runoff and pollutant exports and water management options. A do-nothing option and six schemes to mitigate the impact of planned future development on lake water quality were assessed. The schemes were:

- Scheme 1: do nothing - keep the current water body as it is without increasing the size (but with BASIX implemented);
- Scheme 2: Existing lake (6ha) with increased tidal flushing (x4);
- Scheme 3: Extended lake (13.5ha) with increased tidal flushing (x2);
- Scheme 4: Existing lake with increased tidal flushing (x1.6) and a new freshwater lake (12ha);
- Scheme 5: Partially extended lake (8 ha) with increased tidal flushing (x1.8) and a new freshwater lake (6.5ha);
- Scheme 6: Existing lake (6ha) with increased tidal flushing (x1.6) and new wetlands (16ha); and
- Scheme 7: Existing lake (6ha) and dry swales.

A multi-criteria assessment of water quality performance, environmental impacts and viability was undertaken, with Scheme 3 and Scheme 5 ranking as the highest two in order of performance and benefit.

Further assessments on the identified highest ranked schemes (schemes 3 and 5) were subsequently undertaken, including:

- groundwater assessments of Schemes 3 and 5 by Coffey Geotechnics in 2007; and
- an integrated water management assessment by Cardno (2008), including an update of Cardno's 2004 hydrological, hydraulic, groundwater and water quality assessments of schemes 3 and 5 to reflect the 2008 Concept Plan and to refine and develop each scheme and any other measures required to mitigate the impacts of the planned development.

The PAC raised a number of concerns relating to groundwater modelling, the proposed stormwater management regime, flooding and hydrological impacts on the adjacent SEPP 14 wetland resulting from the implementation of proposed Scheme 5. Additional assessments were subsequently undertaken to address the concerns of the PAC, including:

- preliminary hydrogeological study and concept groundwater management plan by Martens and Associates (2011); and
- updated hydrological, hydraulic, groundwater and water quality assessment by Cardno (2011) (a new Scheme 8 which is a modified version of Scheme 5 excluding rainwater tanks, which was amended in response to comments from DoP, the PAC and relevant agencies), reflective of the current Concept Plan which has evolved in response to comments received from DoP, the PAC and relevant agencies.

As summarised above and detailed in *Volume 3*, a range of water management options have been assessed for Riverside at Tea Gardens. The currently proposed scheme (scheme 8), has been developed in response to the issues raised by the PAC, DoP and relevant agencies.

3.4 *DESIGN PRINCIPLES*

3.4.1 *Design Principles and Vision*

The design approach is based on the outcomes of a design forum and principles of traditional neighbourhood design. The overarching principles that emerged from the design forum serve as aims of the Concept Plan. The principles are to:

- preserve the character of Tea Gardens;
- reinforce the unique community spirit; and
- protect and enhance natural assets.

The principles of traditional neighbourhood development (TND) incorporate:

- walkable neighbourhoods, in which the neighbourhood is limited in size so that the majority of the population is within a five minute walk of its centre;
- connected networks whereby thoroughfares are designed so that there are alternate routes to most destinations, thereby promoting greater permeability;
- a mix of buildings and uses to integrate a range of housing types;
- quality open space in the form of specialised plazas, squares, playgrounds and parks; and

- community buildings such as recreation facilities, meeting rooms and the like, that are located within open spaces or at the termination of important views to serve as important land marks.

The design approach is based on the outcomes from a range of environmental assessments and the need to achieve the following environmental outcomes:

- an efficient east west movement corridor;
- augmentation of mapped regional corridor;
- protection of higher quality habitat areas;
- coordination with design of proposed development to the north;
- connection to council reserve areas;
- protection from climate change and flood impacts;
- consideration of climate change buffering and recession;
- meeting and exceeding water quality management targets; and
- consideration and protection of downstream ecosystems from adverse environmental impact.

The incorporation of these principles into the Concept Plan is described further in the next sections.

3.4.2 *Street Pattern, Orientation And Lot Size*

The design proposal for Riverside is, by urban design standards, a low density village with lots averaging around 600sqm in size at a net density of 13 dwellings /hectare (the maximum density requirement stipulated by Great Lakes Council in the Tea Gardens and Hawkes Nest Housing Strategy). By virtue of this density, more freedom is afforded in solar orientation to allow for adequate solar access to predominantly single and two storey residences (height levels are restricted under the Residential 2(f) zone).

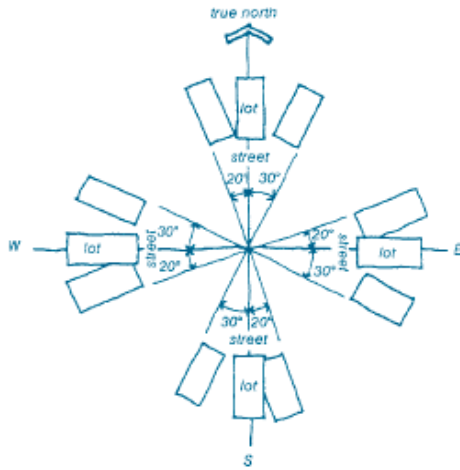
The general layout of the road pattern seeks to minimise large areas of a continuous/ repetitious grid pattern in favour of a series of more compact grid pattern pockets of development where split streets, open spaces and perimeter roads maximise the edges through which solar access, as well as outward looking to open space, can occur.

Generally the road pattern is aligned diagonally to true north. Much of the road pattern is guided by stormwater runoff characteristics within a 'ring road' network to help provide a management buffer between the development and conservation areas. Within the established street network a large range of lot types and sizes are proposed in order to cater for a variety of household budgets, household sizes and the needs of each household's

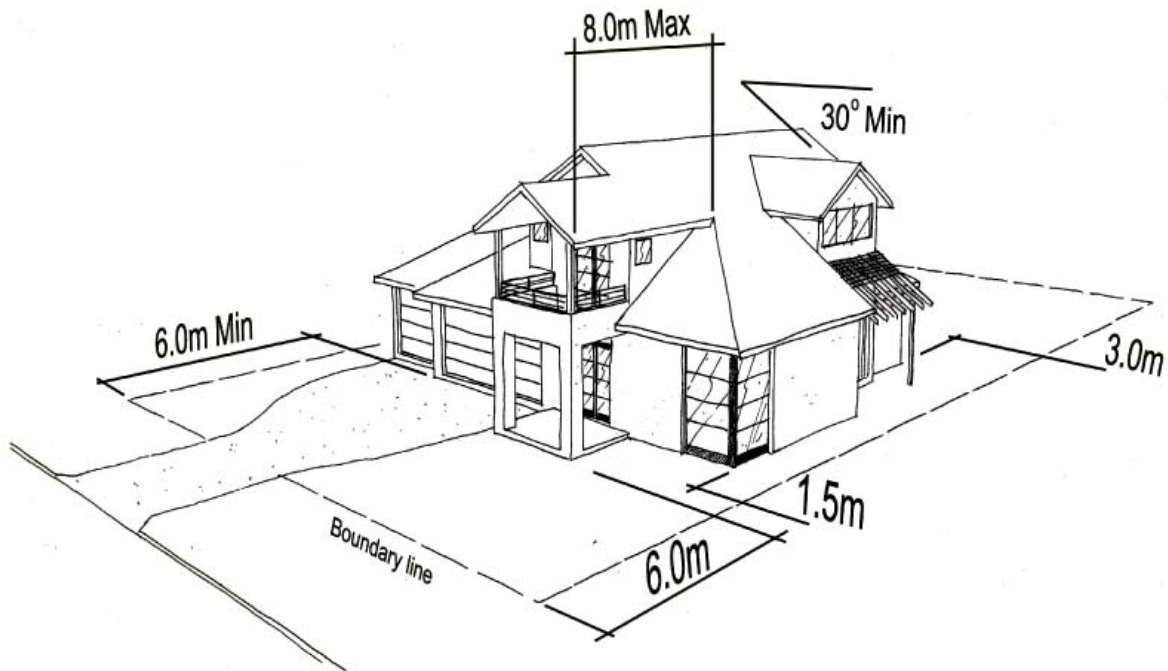
occupants. Each lot lends itself to a favoured orientation, which is shown within the project documentation sheets R.C. 30 – R.C. 36 (refer to Concept Plans within *Volume 2*). These sheets illustrate suitable house forms to capitalise upon the preferred orientation for that lot – these are replicated within the Riverside layout.

Where density is increased (for example along the main road at the second roundabout approach), orientation is configured north / south and rear lane access is provided. This enhances solar orientation and maximisation of frontage to the active street. In addition to overall street layout, a range of lot sizes and design criteria for dwellings will be made available/ implemented by the Community Association by way of Architectural Standards which seek to maximise opportunities for solar access to each individual residence. These standards include:

- stepping back of the structure at the first floor level by 3.0 metres from side boundaries to allow for solar access and minimise overshadowing; and
- breaking up of roof forms to allow for attenuation and further opportunity for sunlight ingress. *Figure 3.4* provides a concept for house design to maximise solar access.



Orientation of Lots within Energy Efficient Subdivision (Source: AMCORD, 1995)



House Design Concept to Maximise Solar Access (Crighton, 2008)

Figure 3.4

Orientation of Lots and House Design Criteria

Client:	Crighton Properties Pty Ltd	
Project:	Concept Plan 2011 Environmental Assessment Riverside at Tea Gardens	
Drawing No:	0043707h_CP_EA_11_C018_R0.cdr	
Date:	06/12/2011	Drawing size: A4
Drawn by:	JD	Reviewed by: SO'C
Scale:	Not to Scale	

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Source:
Crighton Properties Pty Ltd



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R0 Preliminary Issue 06-12-11 JD
Suffix Revisions Date Init



3.4.3

Streetscape

Street Type and Streetscape

The design approach is based on the outcomes of consultation with the community and principles of traditional neighbourhood design. The street type and layout design incorporates a street hierarchy to provide streets that fulfil their designated functions and create a legible, safe and attractive environment.

The new entry street from Myall Street is a four lane divided road, which will feature an attractive tree lined avenue as an entrance to the development. The street types have sufficient reservation widths to accommodate public utility services, landscaping and footpaths where appropriate.

The street network supports the provision of a public transport route with the main street having sufficient pavement width to cater for buses and the layout allowing buses to service the site, via a loop route, without having to double back on themselves.

The internal arrangement provides for six separate new connections to the existing road network with two to Toonang Drive, one to Myall Street, two to Shoreline Drive and one to Myall Quays Boulevard.

A comprehensive street planting scheme has been developed to add colour and softness to the built form. Drawings R.C 23 to R.C 29 (*Volume 2*) provide detail on landscape schedules for differing street types.

Pedestrian and Cycle Circulation

Walkability and cycle access is a key feature of the development of the site, with a cycle / pedestrian network through the residential subdivision and integrated with the wider area. The street network is designed as an environment that is equitable for the pedestrian, cyclist and motorist. The proposal includes a range of inter-connected on street and dedicated off street cycle ways and pedestrian access ways.

3.4.4

Urban Design

A three day design forum was conducted by Roberts Day on behalf of Crighton Properties in February 2006 to undertake a workshop with local residents and officers of the Great Lakes Council to identify the urban design concepts for the Myall River Downs and Riverside sites (refer to *Annex I, Volume 1B*).

The urban design concept proposes 'three compact, walkable mixed-use neighbourhoods' surrounded by a comprehensive open space system of parklands and water bodies' (Roberts Day, 2007). The plan allocates environmentally sensitive land into a permanent nature preserve. A network of carefully laid trails and boardwalks provides the entire community with the opportunity to engage meaningfully with these conservation zones (Roberts Day, 2007).

The steep topography to the north of the site, overland water flows and high water table has resulted in the creation of extensive green corridors. A variety of separate detention ponds/lakes will environmentally manage water runoff. Pedestrian and cycle trails weave throughout this system connecting each village precinct (Roberts Day, 2007).

The major urban design principles include walkable neighbourhoods, connected communities, a mix of building types and uses, design of quality open space, and the use of civic buildings as local point and destinations. These urban design principles have been achieved in the following ways:

- a reduction in the size of neighbourhood to smaller communities to allow walkability to community facilities and public transport nodes;
- design of road networks to provide alternative routes to destination which include connected pedestrian pathways and separation between vehicles and pedestrian movement to encourage walkability;
- provide a mix of uses within a community to provide for passive surveillance within a community to increase safety and security whilst moving through the neighbourhood;
- by providing a full range of housing types, age and economic classes are integrated and the bonds of an authentic community are formed;
- open space is provided in the form of specialised plazas, squares, greens, playgrounds, parks and greenways. Each type is defined by its size; the landscaping used, if any; and the way the space is surrounded; and
- civic buildings, such as community facilities, churches, and community halls are located within open spaces or at the termination of important vistas. Such structures promote democratic initiatives and the balanced evolution of society is facilitated (Roberts Day, 2007).

3.4.5

Riverside Architectural and Landscape Design Guidelines

The development of Riverside provides a unique opportunity to formulate architectural and landscape design guidelines that will assist property owners to construct homes which are both distinctive and innovative and will provide the future residents with enhanced privacy and comfort.

The primary reasons for wanting to affect more control over building activities in Riverside are:

- (a) to encourage the care of the environment within the estate and to foster ecologically sustainable design including reducing the cost of energy;
- (b) to preserve the design integrity and architectural quality of homes in the estate to enhance amenity and add value to all property in the precinct;
- (c) to preserve and enhance the existing landscape and the quality of the streetscape to provide the residents in the community with an environment they can enjoy and take pride in;
- (d) to maintain the highest possible aesthetic standards to assist in establishing Riverside as an attractive and desirable place to live on the Mid-North Coast; and
- (e) to prevent any owner building a home in the estate which, because of its inappropriate design relative to the block on which it is proposed to be built, devalues the surrounding properties, causing potential financial losses to neighbours.

The Design Guidelines link to the Community Association By-Laws and Management Statement. The Community Title arrangements are discussed in detail within *Section 8.16*.

In order to ensure that new developments adhere to the design guidelines a Review Committee has been established. The Review Committee, consisting of two design consultants nominated by Crighton Properties and a Director of Crighton Properties, has been established as a sub Committee to the Executive Committee of the Community Association. The Review Committee's role is to ensure that the development preserves and protects the estate in a natural environment and maintains the concept, image and aesthetic quality of the development.

To that end no building, dwelling, accessory building, fence or other structure shall be erected, placed, demolished or altered on any lot within the community parcel until the proposed design and documentation including site plan, floor plans, elevations, together with details, specifications, external finishes and a construction programme has been approved in writing by the Review Committee (Crighton Properties, 1996).

An architectural guideline information brochure has been prepared which outlines the theme of the estate, the residential built form guidelines including roofing, siting and massing of the residential built form, fencing heights, styles and wall colours and finishes. The brochure details the pre-lodgement requirements for the preparation of plans to be submitted to the Review Committee prior to submission with Great Lakes Local Council.

The Architectural and Landscape Design Guidelines prepared by Crighton Properties also detail design considerations for energy efficiency, water conservation, lighting and open space design. The details of the design requirements are within *Annex E* and *Annex F* of *Volume 1B*.

3.5

SITE PERMEABILITY

The Myall River Downs and Riverside sites are separated by Myall Street which is the major entry to the township of Tea Gardens. In its current state it does not provide a memorable arrival experience. The Master Plan for Riverside and Myall River Downs seeks to address this issue. The Master Plan is structured on three main elements: Nature Preserve, Neighbourhoods and Corridors, (Roberts Day, 2007). The context of the Tea Gardens area requires an assessment of the access and servicing over both the Riverside and Myall River Downs site as both sites will need to demonstrate links between the employment, industrial and retail areas which will be development on both sites to service the area.

The Corridors are the linear open space systems which weave between the villages and precincts and interconnect the Nature Reserves. Throughout Riverside and Myall River Downs these corridors have been sculptured into attractive linear parks with detention ponds and water bodies to effectively manage water. A comprehensive system of pedestrian, cycle paths and trails weave throughout these three main elements (Roberts Day, 2007).

The entry to Tea Gardens via Myall Street is dysfunctional and dangerous for pedestrians. To provide a more appropriate access point to Tea Gardens it is proposed to change Myall Street into Myall Boulevard. The Master Plan allows pedestrians to cross safely, and traffic calming to ensure a safer environment for all users. The Master Plan provides a traffic calming solution that is attractive, distinctive and effective. At the same time it preserves the thoroughfare's vehicular capacity (Roberts Day, 2007).

The reconfiguration proposes one-way parallel service roads to be built on both sides of Myall Boulevard thereby allowing local traffic to access Riverside and Myall River Downs and minimise interference with through traffic. A central median will also be added. Closely spaced canopy trees will line the median, service roads and pedestrian /cycle paths. The trees combined with distinctive butteries at the northern edge of the township, will herald arrival and further calm traffic. The reconfiguration will dramatically improve the pedestrian and cycle paths into the township, and provide a safe crossing environment (Roberts Day, 2007).

The design of the Riverside site has included transport networks and public transport corridors to provide a connection between the Myall River Downs site and the adjoining Tea Gardens, Shearwater Estate and Hawks Nest areas. The Urban Design Report prepared by Roberts Day (*Volume 1b*) identifies the movement of traffic through the site and its connection with the existing area.

3.5.1

Amenity and Scale

The character and amenity of the Tea Gardens/Hawks Nest area was identified as an outcome from a Design Forum held in February 2006. The forum identified the architectural elements which made the residential developments within Tea Gardens a unique coastal village atmosphere which should be retained by future developments. This architectural style was:

- simple, straightforward volumes with front wings and verandas added to make more complex shapes;
- deep, usable posted front verandas with regular arrangement of columns and openings;
- simple eave lines accommodate gabled roof forms;
- single driveway to a garage set far back on the lot;
- buildings raised off ground on a plinth; and
- limited use of materials with lighter materials above heavier and joined horizontally.

This architectural style was incorporated into the Architectural Design Guidelines within the Community Management Statement to guide future residential development in a manner which preserves and highlights the existing architectural styles.

The Coastal Design Guidelines of NSW (2003) outlines guidelines to stimulate debate on:

- *'how to protect and plan for the diversity of settlement types along the coast;*
- *how to avoid continuous strip-type urban development along the coast;*
- *where to encourage new settlements or large residential and rural residential subdivisions, particularly in relation to existing settlements;*
- *which places are able to grow larger sustainably;*
- *which types of settlement are to be protected from major developments;*
- *how to protect publicly and privately owned non-urban lands; and*
- *along the coast that have high scenic or ecological values' (DoP, 2003).*

The design forum allowed the guidelines to be addressed and influence the overall design of the Riverside site. Elements including residential density, the need for recreational facilities and improvements in civic spaces lead to the specific design of open spaces and civic streets which provide a sense of community within the Riverside site complementing the existing character of the Tea Gardens/Hawks Nest area.

The proposed open spaces and civic streets illustrate the logic and continuity of the open space system. Green corridors between neighbourhoods create a connected system for humans and animals, and to manage water run-off. This system connects to the nature reserve around the perimeter of the site (Roberts Day, 2007). The open space networks also provide both passive and active community facilities in the form of clubhouses, tennis courts and playing fields. The inclusion of various forms of community facilities allows for community interaction within the various precincts to create a village atmosphere.

The desired future character under the NSW Coastal Design Guidelines (2003) includes interconnectedness of residential areas, an ability to provide total water cycle management, a design that provides wildlife corridors and avoids areas of ecological significance and preserves and protects waterways as significant coastal locations. The desired future character is achieved within the Riverside development through the inclusion of separate freshwater detention ponds to provide total water cycle management and an attractive visual landscape within the open space networks which also function as wildlife corridors. The site adjoins SEPP14 Wetlands which are to be preserved as part of this development proposal.

3.5.2

Density

Requirements of Revised Draft Tea Gardens Housing Strategy

Riverside will be a combination of traditional housing lots and smaller lots, with at least ten percent of the lots less than 450 square metres in area, in accordance with Council's adopted Housing Strategy. The development will achieve a net density of at least 13 dwellings per hectare across the site, in accordance with Council's adopted Housing Strategy. The different lot sizes provided for in the Riverside development are detailed within Drawing R.C-07 within the Concept Plans provided in *Volume 2*.

Within the existing Hawks Nest and Tea Gardens settlement there is a gradation of density from urban adjoining the waterways and beaches of Hawks Nest and Tea Gardens to rural near Monkey Jacket. This has occurred in response to the amenity of Jimmy's Beach, Bennett's Beach and Myall River, which has been a driver for infill development (Duo, 2010). Development inland from these settlements has largely been driven by an older population, which has resulted in less dense development with this population preferring single storey dwellings over higher density dwelling types that have stairs or are expensive to construct if they include a lift. The Concept Plan incorporates a range of lot sizes throughout the estate, to create a mixed development.

DUO (2007) undertook an assessment of housing issues for the Riverside at Tea Gardens development (refer to *Volume 5*), including an assessment against the requirements and principles of the *revised draft Tea Gardens Housing Strategy*. A key principle of the *revised Tea Gardens Housing Strategy* is the

provision of an average net density of 13 dwellings per hectare. The Concept Plan provides for an average density of 13 dwellings per hectare with a range of dwelling types, sizes and configurations, including single dwellings on a variety of lots and multiple dwelling lots.

In accordance with Council's Housing Strategy, all proposed buildings will be low density, detached or semi detached and restricted to a maximum height of 9 metres. These building controls combined with streetscape planting will create a low impact, natural coastal living environment.

The Concept Plan includes tourism facilities and residential development in the north east portion of the site. This precinct includes larger lots able to retain existing trees amongst the lodges and dwellings.

Justification of Proposed Density

The *Mid-North Coast Regional Strategy* identifies dwelling requirements for the Manning Valley - Great Lakes subregion. A total of 15,000 dwellings are required by the Strategy by 2030. Riverside at Tea Gardens is identified as a growth area in the Strategy and is currently zoned 2(f) Mixed Residential / Commercial.

The Concept Plan for Riverside has been designed around limitations associated largely with ecological and drainage / flooding constraints across the site. As a result of these limitations, a total residential, tourist and future development footprint of 75.2 ha is proposed (including roads and community facilities), which represents 33.8 per cent of the total site area. A total of 141.7ha, or 63.7 per cent of the site will be retained as conservation areas, wildlife corridors, open space, drainage corridors and parks. The proposed yield for the site based on the development footprint is 920 dwellings.

Additionally, as detailed in *Chapter Error! Reference source not found.* there are a number of proposed future urban release areas in the Hawks Nest/ Tea Gardens locality identified within the Strategy which have significant issues affecting their future viability and the achievement of their notional yields.

The *Mid-North Coast Regional Strategy* identifies that currently 80 per cent of all dwellings in the Mid-North Coast region are detached houses. As a result of changing demographics and lower occupancy rates, a key aim of the Strategy is to:

'Ensure that new housing meets the needs of smaller households and an ageing population by encouraging a shift in dwelling mix and type so that 60 per cent of new housing is the traditional detached style and 40 per cent is of multiunit style.'

The Strategy therefore provides for greater densities within the Mid-North Coast region and encourages multiple dwelling development, which the Riverside Concept Plan provides.

A development density of 13 dwellings per hectare for the Riverside development, which is consistent with the *revised draft Tea Gardens Housing Strategy* and consistent with the aims of the *Mid-North Coast Regional Strategy*, will ensure an appropriate yield to assist in meeting the required minimum dwelling requirements detailed in the *Mid-North Coast Regional Strategy*.

3.5.3 *Solar Access*

The design of Riverside at Tea Gardens subdivision is based on an analysis of the constraints and opportunities of the site, particularly relating to its physical attributes, potential hazards and the appropriate range of housing stock to cater for diverse household types. The planning layout (street grid) of the Riverside site responds to many informers of urban design, including;

- ecological constraints;
- water movement patterns / slope of land;
- transport and pedestrian movement patterns;
- access to open space;
- privacy;
- hierarchy of density;
- passive surveillance; and
- permeability.

Many of these concepts are explained in more detail within the Riverside Design Manual prepared by Roberts Day (2007). In addition to these design considerations, particular attention has been paid to passive thermal efficiency of the Riverside site, through the consideration of solar access and orientation. Design consideration has primarily occurred at three levels namely:

- street pattern and orientation;
- range of lots sizes; and
- house design criteria.

Each of these will be designed to work in unison with each other to ensure a balanced thermally efficient outcome.

3.5.4 *Mixed Tourist / Residential Precinct*

The Concept Plan incorporates a mixed tourist / residential precinct within the north east portion of the site. The precinct will incorporate a tourist / residential development consisting of buildings scattered within a bushland

setting, supplementing the adjacent wildlife corridor and increasing fauna movement across the site. The precinct will include 50 tourist lodges and 15 units. Whilst subject to future design, the form of the buildings will generally be two storeys in height in keeping with Council's revised draft Housing Strategy. The layout of the tourist/residential precinct is detailed in Drawing R.C - 10 within the Concept Plans of *Volume 2*.

3.5.5 *Community Facilities*

Each of the residential precincts within the overall development of Riverside will have their own unique focal point and facilities. The club houses are proposed to provide entertainment, recreation, health and small business support amenities.

3.5.6 *Recreation Facilities*

Council has acknowledged that to accommodate the expected population growth in Tea Gardens and Hawks Nest of the magnitude predicted over the next 25 years, existing public services and facilities will need to be extended and other facilities may need to be provided.

Structured Open Space

Council's Section 94 Contributions Plan requires the provision of approximately 14 hectares of structured open space (15% courts and 30% playing fields) (refer to the *Recreation Study* (ERM 2011d provided in *Volume 5* of the EA).

Current development plans show 15.5 hectares of recreational land. This represents a surplus of approximately 1.5 hectares if all future developments provide their full complement of open space.

The structured open space requirement for Riverside at Tea Gardens and Myall River Downs is 6 hectares which, in accordance with the Voluntary Planning Agreement between Crighton Properties and Great Lakes Council (refer to *Annex J* of *Volume 1B* of the EA), is being provided within the Myall River Downs site. As detailed within Table 4.2 of the *Recreation Study* (ERM, 2011d) (refer to *Volume 5* of the EA), an additional 1.3 hectares of structured open space is required in addition to that required for Riverside at Tea Gardens (which is required to provide 2.2 hectares) and Myall River Downs to meet the future needs for Tea Gardens and would be recovered in section 94 contributions from North Shearwater, infill development within Tea Gardens. The full complement of structured open space attributable to Riverside at Tea Gardens is to be provided at the Myall River Downs site as provided for in the Voluntary Planning Agreement (see *Annex J, Volume 1B*). As the VPA cannot apply to a Concept Plan it is intended to be introduced formally at the Project Application stage. The Statement of Commitments makes it clear that this process will be followed.

3.5.7

Public Access

A conservation area adjoining the Myall River within the north east section of the site will be created. Limited public access to the Myall River foreshore will be provided via pathways established between the Myall River and residential development to the west.

Controlled public access will also be provided in proximity to the Myall River and SEPP 14 Wetland through the construction of pathways adjacent to, but not within the 7(b) Conservation zone. The location of the pathways will facilitate public access, whilst protecting the SEPP 14 Wetland and wetland buffer (conservation land) from informal public access. An asset protection zone to be constructed within the 2(f) zone, adjacent to the 7(b) conservation lands will provide additional separation to the conservation area, thereby minimising edge effects.

3.5.8

Open Space and Landscape Design

A variety of open space typologies are provided including plazas, pocket parks and corridors. Open space corridors have been located and designed in response to the steep topography to the north of the site, overland flow paths and the high water table. The corridors are linked to create a connected system for future residents and fauna. A variety of swales and ponds will manage water runoff.

Each of the open space area has lots that are orientated towards them providing opportunities for passive surveillance in the future. This layout will also provide an address to the open spaces, creating attractive and comfortable open spaces.

Open Space Corridors

The open space corridors have been designed as multi-function corridors that address drainage water treatment, pedestrian/cycle access, recreation and amenity (refer to Drawing R.C. -11 within *Volume 2*). The corridors have been designed in accordance with the following principles:

- maximise accessibility through the use of “soft engineering” principles, the use of batters and ramps in lieu of retaining walls to provide logical pedestrian connections. In addition, a series of small bridges will be provided where crossing of drainage lines is required;

- maximise passive surveillance through selective planting of shrubs and a focus on the use of groundcovers and clean trunked canopy trees. In addition to sensitive landscaping the use of pedestrian lighting will be incorporated where appropriate.
- provide for drainage requirements during high flow events through the inclusion of a defined channel which will be planted with species that tolerate periodic inundation; and
- provide for separation of the private recreation and club facilities through subtle landscape solutions that integrate with the public domain landscaping (Andrews Neil, 2007).

Tenure

All parks and open space will remain under the ownership of the Community Association. The Community Association will raise funds and undertake management in accordance with the various management plans prepared for the site.

Maintenance

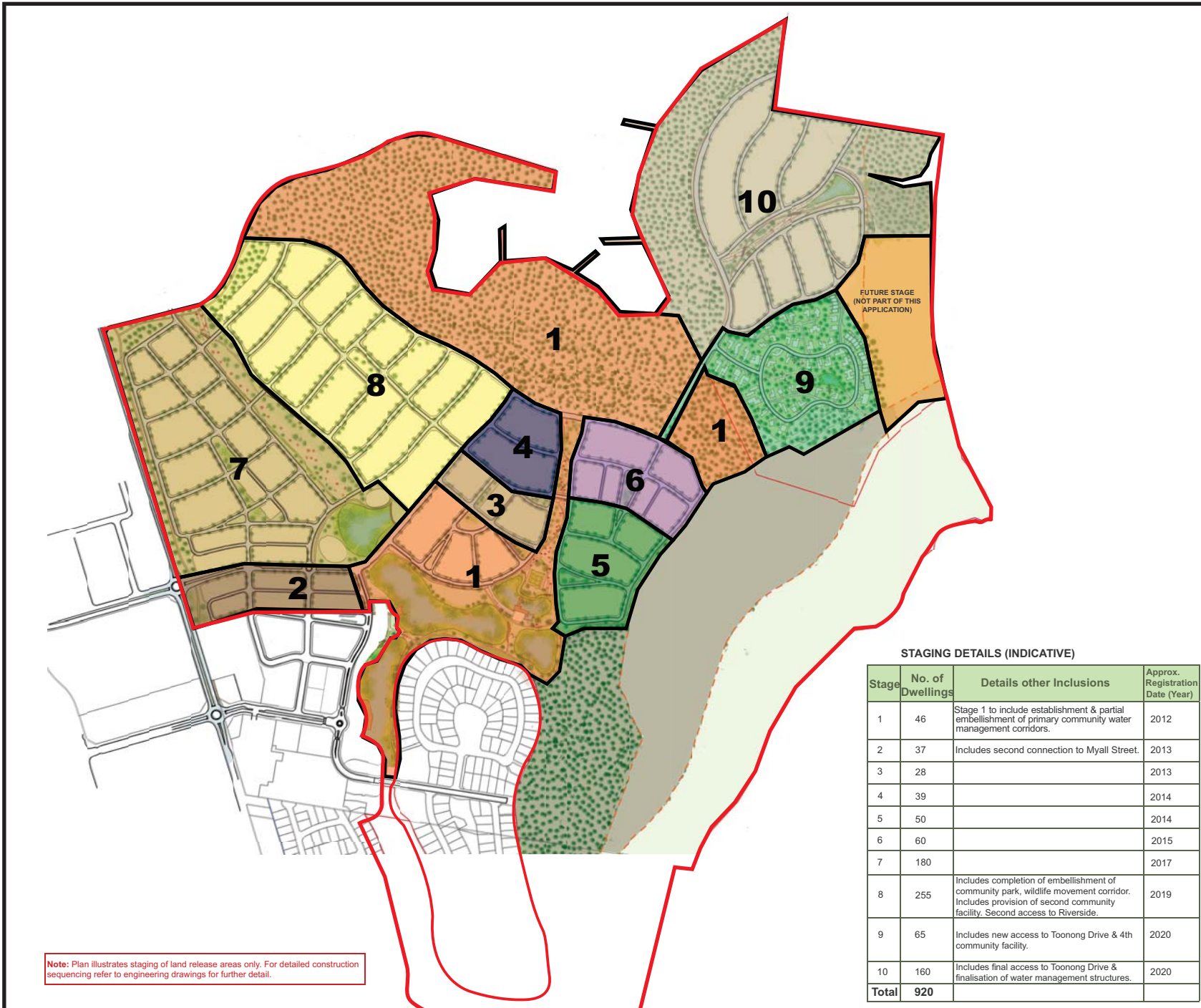
The landscape contractor will be responsible for the maintenance of all the landscaped areas for twelve months after practical completion has been awarded. When the twelve month maintenance period is completed the ongoing maintenance will be the responsibility of the Community Association (Andrews Neil, 2007).

3.6 STAGING

An indicative staging plan detailing approximate number of dwellings is shown in *Figure 3.5*. A summary is provided in *Table 3.4*.

Table 3.4 *Staging Program*

Stage Number	Number of Dwellings
1	46
2	37
3	28
4	39
5	50
6	60
7	180
8	255
9	65
10	160
Total	920



Note: Plan illustrates staging of land release areas only. For detailed construction sequencing refer to engineering drawings for further detail.

Legend
 Riverside at Tea Gardens Site Boundary

Source:
 Crighton Properties - Concept Plan R.C.- 08/ November 2011 Revision N

Suffix	Revisions	Date	Init
R0	Preliminary Issue	20-12-11	JD

Figure 3.5
Indicative Staging Plan

Client: Crighton Properties Pty Ltd
 Project: Concept Plan 2011 Environmental Assessment Riverside at Tea Gardens

Drawing No: 0043707h_CP_EA_11_C031_R0.cdr
 Date: 20/12/2011 Drawing size: A4
 Drawn by: JD Reviewed by: SO'C

Scale: Refer to Scale Bar

Maps and figures contained within this document may be based on third party data, may not be to scale and is intended for use as a guide only. ERM does not warrant the accuracy of any such maps or figures.

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STAGING DETAILS (INDICATIVE)			
Stage	No. of Dwellings	Details other Inclusions	Approx. Registration Date (Year)
1	46	Stage 1 to include establishment & partial embellishment of primary community water management corridors.	2012
2	37	Includes second connection to Myall Street.	2013
3	28		2013
4	39		2014
5	50		2014
6	60		2015
7	180		2017
8	255	Includes completion of embellishment of community park, wildlife movement corridor. Includes provision of second community facility. Second access to Riverside.	2019
9	65	Includes new access to Toonong Drive & 4th community facility.	2020
10	160	Includes final access to Toonong Drive & finalisation of water management structures.	2020
Total	920		

Community title is proposed to be divided into 5 precincts as shown in Drawing R.C. -09 within *Volume 2*.

The Community Management Statement (Crighton Properties, 2010) is already in operation for the Riverside development over Lot 40 (proposed precincts 1, 2 and 3) and identifies the terms binding the Community Association, the Executive Committee and any future landowners with respect to the Community Scheme. The Community Management Statement is provided in Annex K, within Volume 1B of the EA.

Lot 10 (proposed precincts 4 and 5) is to be the subject of a future community scheme, similar to that in operation for Lot 40.

All footpaths, cycleways, open space areas, parks and water treatment facilities outside of road reserves will be owned by the Community Association, as detailed within Drawing R.C.-09. Public access to these areas (excluding the clubhouses) will be provided and encouraged. Roads will be dedicated to Great Lakes Council.

The by-laws detailed within the Community Management Statement relate to the control and preservation of the essence or theme of the Community Scheme and therefore can only be revoked or amended by a unanimous resolution of the Community Association. The Management Statement includes the following requirements for development within the Riverside site:

- the architectural and landscape standards which outline the standards/requirements for the design of residential development and community property;
- approvals process for the construction and/or modification of buildings or landscaping;
- outlines the responsibilities of the Community Association and Executive Committee in the control, management and maintenance of community property;
- provides regulation of fence heights, collection of garbage, car parking, the keeping of animals, TV Aerials, etc; and
- identifies the need for the Community Association to ensure that the appropriate insurances are obtained and managed for all community property.

The Community Management Statement for Myall Quays does and will continue to apply to the community land within Riverside at Tea Gardens. Alterations to the Community Management Statement are unable to be made without unanimous resolution of the Community Association, however, additional controls at the precinct level (via Precinct Management Statements)

are proposed to be implemented to restrict development within the community lands of jetties and pontoons, to overcome By Law 4.17 of the Community Management Statement, a stance which the Architectural Review Panel has maintained since its inception. To date, the Community Association has adopted a policy of not permitting any jetty / pontoon structures to be erected on community land.

3.7.1

Contributions

Section 94 Contributions

Section 94 of the EP&A Act enables consent authorities to levy contributions on developers towards the cost of providing local public infrastructure and facilities required as a result of development. Contributions can only be sought by councils where there is an adopted contributions plan in place.

Section 94 contributions are based on two key concepts:

- reasonableness in terms of nexus (the connection between development and demand created) and apportionment (the share borne by future development); and
- accountability both public and financial.

A Section 94 contribution can be satisfied by a dedication of land, a monetary contribution, material public benefit or a combination of all three (Connell Wagner, 2007).

The Minister, when determining an application under Part 3A of the EP&A Act, must have regard to any contributions plan that is in place pursuant to section 94D. The Minister may also have regard to any planning agreement that is being negotiated. Section 94 is the exclusive source of power for a Council to impose a condition requiring land dedication or monetary contributions, and this power must be specifically authorised by a duly adopted section 94 contributions plan ("CP"). This is an important consideration since a Council wishing to impose such conditions outside section 94 is acting out of power unless these are done under the auspices of a planning agreement (Connell Wagner, 2007).

The Connell Wagner (2007) report (refer to *Volume 5*) identifies that the Great Lakes Council has in place an "LGA wide" section 94 Contributions Plan (Great Lakes Wide Section 94 Contributions Plan) and a specific Contribution Plan for the Tea Gardens/Hawks Nest area (Tea Gardens & Hawks Nest Section 94 Contributions Plan). These provide details of the various facilities that the Council intends to provide to cater for population growth.

The LGA wide Contributions Plan has an effective life to 2009/2010 and includes provision for the following public facilities:

- library facilities;
- rural fire fighting facilities; and
- administrative building (Connell Wagner, 2007).

The Tea Gardens/Hawks Nest Plan has an effective life to 2010/2011 and includes provision for the following:

- open space, such as parks, playing fields and courts;
- cycleways;
- community facilities such as libraries and community centres;
- surf life saving facilities; and
- upgrading the road network to accommodate increases in traffic (Connell Wagner, 2007).

Voluntary Planning Agreement

Recent planning reforms have widened the gambit of the contributions system to include new provisions under Section 93 and Section 94A of the EP&A Act, which provide greater flexibility as to the means of levying a contribution. The amendments provide for the following methods of funding local infrastructure by a consent authority through:

- Section 94 contributions;
- Section 94A levy; and
- Planning Agreements (Connell Wagner, 2007).

Provisions for planning agreements have been codified under Section 93 of the EP&A Act. Planning agreements are intended to be voluntary and can be entered into as part of the rezoning or development approval process. Planning agreements may be directed towards achieving the following:

- meeting the demands created by development for new public infrastructure, amenities and services;
- securing off-site planning benefits for the wider community;
- compensating for loss of or damage to a public amenity, service, resource or asset by development through replacement, substitution, repair or regeneration; and
- meeting the recurrent costs of facilities and services (Connell Wagner, 2007).

A planning agreement may provide for a monetary contribution, land dedication, or material public benefit towards a public purpose (which is widely defined). A planning agreement may also wholly or partly exclude the application of Section 94 or Section 94A of the EP&A Act.

The planning reforms provide Crighton Properties with the opportunity to facilitate their contributions for future demands through a Voluntary Planning Agreement. The development of Crighton Properties holdings including Riverside and Myall River Downs is expected to occur over a 20 year period which is not adequately facilitated by the Great Lakes Council Contribution Plans. A Voluntary Planning Agreement (VPA) has therefore been prepared to provide appropriate contributions to the public and satisfy future development needs generated through the development of Crighton Properties holdings.

A Voluntary Planning Agreement (VPA) has been prepared jointly by Crighton Properties and Great Lakes Council (see *Volume 1B Annex J*) to facilitate development contributions towards a range of public facilities in the Tea Gardens locality, which is subject to approval by the Minister for Planning under Part 3A of the EP&A Act 1979. The Agreement becomes operational from the date it is signed by both parties. The VPA will span the life of the project and provides flexibility in the future should the development concepts change or demands for specific public infrastructure or services fluctuate.

The specific development contributions are provided either through monetary contribution, land dedication, upgrading of street networks and/or other works in kind. The specific details of the contributions and the obligations of the signatory parties are outlined within the *Voluntary Planning Agreement* (see *Volume 1B Annex J*).

As the VPA cannot apply to a Concept Plan it is intended to be introduced formally at the Project Application stage. The Statement of Commitments makes it clear that this process will be followed.

4 STATUTORY REQUIREMENTS

This chapter sets out the relevant Commonwealth, State, regional and local statutory requirements that relate to the proposal.

4.1 COMMONWEALTH LEGISLATION

4.1.1 *Environmental Protection and Biodiversity Conservation Act, 1999*

The *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) states that approval is required under the Act for actions that are likely to have a significant impact on the environment of Commonwealth land and on matters of national environmental significance. Matters of national environmental significance under the Act include the following:

- World heritage properties;
- National heritage places;
- Ramsar wetlands;
- Threatened species or ecological communities listed in the EPBC Act;
- Migratory species listed in the EPBC Act;
- Commonwealth marine environment; and
- Nuclear actions.

The site is not in a World Heritage Area; is not a National Heritage Place; does not contain Ramsar wetlands of international importance nor a Commonwealth marine environment; the proposal is not a nuclear action nor does it have a significant impact on migratory species or ecological communities listed in the EPBC Act. One threatened species, the Grey-headed flying-fox, has been previously recorded on the site. The species is listed as Vulnerable under the EPBC Act. A referral has been made to the Department of Environment, Water, Heritage and Arts seeking confirmation that this project does not constitute a controlled development as it will have minimal impact on the Grey-headed flying-fox.

4.2 PROVISIONS OF RELEVANT STATE ACTS

4.2.1 *Environmental Planning and Assessment Act 1979*

The principal State planning legislation for the site is the *Environmental Planning and Assessment Act 1979* (EP&A Act). There are three approval streams under the EP&A Act for development in NSW. These are regulated by Parts 3A, 4 and 5 of the Act. Environmental planning instruments, predominantly local environmental plans (LEPs) and State environmental planning policies (SEPPs), dictate which of these three approval streams apply in any particular circumstance. These three assessment/approval streams can be summarised as follows:

Part 3A applies to projects identified in *State Environmental Planning Policy (Major Projects) 2005*. The Minister for Planning is the approval authority for Part 3A projects.

Part 4 applies to all development listed as being permissible with consent under an environmental planning instrument.

Part 5 applies to any approval or decision of a government agency or statutory authority to undertake an activity that does not require approval under either Parts 3A or 4 of the EP&A Act and is not listed as exempt or complying development in an environmental planning instrument.

The Minister for Planning previously confirmed by letter dated 16 September 2008 (REF: 904 1553) that the project was a matter to which Part 3A of the *Environmental Planning and Assessment Act, 1979* (EP&A Act) applies, and that an application may be lodged with the Director General. In a letter dated 12 August 2010 ERM sought further confirmation that the proposed development would be considered to be a major project under Clause 6 of the Major Projects State Environmental Planning Policy.

On 16 September 2010 the Deputy Director General, Development Assessment and Systems Performance revoked the previous Minister's declaration issued on 4 September 2008, authorised the submission of a Concept Plan for the proposed development and declared the project as being one to which Part 3A of the EP&A Act applies for the purpose of section 75B of that Act.

This Environmental Assessment report considers the likely impact of the project on the environment and has been prepared in accordance with Clause 75(F) of the EP&A Act.

The consistency of the project to the objects of the EP&A Act is detailed in *Table 4.1*.

Table 4.1 Compliance with the relevant objects of the NSW Environmental Planning and Assessment Act 1979

Object	Proposal/Comment
To encourage:	
the proper management, development and conservation of natural and artificial resources, including agricultural land, natural areas, forests, minerals, water, cities, towns and villages for the purpose of promoting the social and economic welfare of the community and a better environment;	The design and layout of the proposed development was determined through an overlaying process of mapping various opportunities and constraints to determine the overall building envelope and the character of the open space network. The constraints mapping identified conservation areas, specifically the Habitat Conservation Area, the SEPP 14 Wetland and the wildlife corridor which contain significant ecological communities. These areas will be largely preserved as part of this project. Community title will apply to the site, ensuring appropriate management of the public areas and facilities for the welfare of the community.
the promotion and coordination of the orderly and economic use and development of land	The proposed subdivision will be constructed and released in stages to meet residential growth demands.
the protection, provision and coordination of communication and utility services	Services for the subdivision will be extended off nearby existing services.
the provision of land for public purposes	The open space corridors and community parks proposed throughout the development provide for public use of the land. The open space areas are linked by walkways / cycleways, facilitating movement and access within and between precincts of the Riverside development and also with adjoining areas for both residents and visitors. This will provide movement paths between and within residential areas, the commercial area and other natural areas throughout the site.
the provision and coordination of community services and facilities	Riverside is well served by education and medical facilities and has access to public transport and employment areas. The development will enhance existing services and community facilities in Tea Gardens through extensions of the existing public bus route, pedestrian and cycle paths. In addition to this the development will contribute to the provision of a community clubhouses.
the protection of the environment, including the protection and conservation of native animal and plants, including threatened species, populations and ecological communities, and their habitats; and	Conservation areas have been identified, specifically the Habitat Conservation Area and the SEPP 14 Wetland which contain significant ecological communities. Onsite conservation areas have been increased to 105.1 ha. Additionally, offsite conservation offsets are proposed as part of a BioBanking Offset Strategy. The wildlife corridor identified within the north portion of the site has been widened and will also be managed to conserve the existing biodiversity and provide a link between the natural environments found on site. The wildlife corridor is identified on the site analysis plan included as <i>Figure 3.2</i> .

Object	Proposal/Comment
<p>ecologically sustainable development:</p> <ul style="list-style-type: none"> • the precautionary principle; • intergenerational equity; • conservation of biological diversity and ecological integrity; and • improved valuation, pricing and incentive mechanisms. 	<p>The design and layout of the proposed development was determined through an evaluation process including the overlaying process of mapping various opportunities and constraints which identified conservation areas, specifically the Habitat Conservation Area, the SEPP 14 Wetland and the wildlife corridor which contain significant ecological communities. The layout and design of the subdivision will ensure these areas are protected, thereby minimising potential impact on these environments and conserving the values of these environments for the benefit of future generations.</p> <p>The proposal promotes the use of ecologically sustainable development principles by:</p> <ul style="list-style-type: none"> • incorporating energy efficient subdivision design and lot size / orientation to maximise solar access; • urban design principles incorporating walkable neighbourhoods and linkages between communities; • the adoption of a total water cycle management design philosophy; • the Habitat Conservation Area and SEPP 14 wetland which will preserve significant ecological communities and provide for ecological corridors; • using engineering, architectural and other best practices to reduce development impacts; • protecting Aboriginal archaeological sites of high archaeological significance; • utilising existing service infrastructure; • creating opportunities for public transport usage thereby improving the efficiency of local and regional services; and • providing additional residential land to meet increasing demand.
<p>The provision and maintenance of affordable housing</p>	<p>At Riverside six approaches will be implemented to encourage the provision of affordable housing, namely:</p> <ul style="list-style-type: none"> • the inclusion of at least ten percent of lots less than 450 square metres, to provide housing options (substantially through the provision of duplexes); • encouraging shared use dwellings incorporating home office facilities to create affordable lifestyle opportunities; • to allow for alternative dwelling types, such as 'dual key' dwellings where areas of a dwelling can be rented out as self contained units; • allowing for an adequate supply of housing in the concept plan; • providing a subdivision design that maximises opportunities for an affordable lifestyle through the use of non motorised transport modes, accessibility of services and facilities and energy and water efficiency; and • encouraging a rental market.

4.2.2

Native Vegetation Act 2003

The *Native Vegetation Act 2003* (NV Act) commenced on 1 December 2005 and repealed the *Native Vegetation Conservation Act 1997* which previously governed the management of native vegetation in NSW.

The NV Act aims to provide flexibility and incentives for farmers to manage native vegetation, end broad scale clearing (unless it improves or maintains environmental outcomes) and encourage healthy and productive landscapes. An assessment of the proposal against the objectives of the NV Act is detailed within the Ecological Assessment Report prepared by GHD (2012), provided in *Volume 4* of the EA.

Clause 12 of the NV Act states:

“(1) Native vegetation must not be cleared except in accordance with:

- (a) a development consent granted in accordance with this Act, or*
- (b) a property vegetation plan.”*

However, the NV Act does not apply to some land. Clause 5 of the NV Act states:

“(1) This Act does not apply to the following land:

- (a) the land described or referred to in Part 1 of Schedule 1 (National park estate and other conservation areas),*
- (b) the land described or referred to in Part 2 of Schedule 1 (State forestry land),*
- (c) the land described or referred to in Part 3 of Schedule 1 (Urban areas).”*

Urban land as defined in Part 3, Schedule 1 of the NV Act includes:

‘land within a zone designated “residential” (but not “rural-residential”), “village”, “township”, “industrial” or “business” under an environmental planning instrument or, having regard to the purpose of the zone, having the substantial character of a zone so designated, not being land to which a property vegetation plan applies’.

This means that the provisions of the NV Act do not apply to clearing within that part of the Riverside at Tea Gardens site zoned 2(f) – *Mixed Residential-Commercial*. No clearing is proposed on site outside of the urban zoned areas.

In addition, section 75U(1) of the EP&A Act specifies that an authorisation referred to in section 12 of the NV Act to clear native vegetation is not required for an approved project under Part 3A of the EP&A Act.

4.2.3

Rural Fires Act 1979

The main objectives of the *Rural Fires Act 1997* are to:

- prevent, mitigate and suppress bush and other fires in NSW;
- co-ordinate bush fire fighting and bushfire prevention throughout the State;
- protect people from injury or death and property from damage as a result of bush fires; and
- protect the environment.

A Bushfire Threat Assessment has been undertaken by Conacher Environmental Group, 2011, for the Riverside at Tea Gardens site in accordance with *Planning for Bush Fire Protection* (RFS, 2006, as amended) (refer to *Volume 4*). However, it should be noted that, in accordance with section 75U of the EP&A Act, authorisation from the Commissioner of the NSW Rural Fire Service (RFS) is not required for an approved project under Part 3A of the EP&A Act. Nevertheless, the subdivision has been designed to incorporate the recommendations of the bushfire protection assessment in relation to asset protection zones, road design and layout, location of water supply and selection of landscaping species. The Bushfire Threat Assessment report has also made a number of recommendations which have been included in the statement of commitments. The Bushfire Threat Assessment is provided in *Volume 4*.

4.2.4

Marine Parks Act 1997

The *Marine Parks Act 1997* (MPA 1997) makes provision for the declaration of marine parks. The objects of the MPA Act are:

- '(a) to conserve marine biological diversity and marine habitats by declaring and providing for the management of a comprehensive system of marine parks,*
- (b) to maintain ecological processes in marine parks,*
- (c) where consistent with the preceding objects:*
 - (i) to provide for ecologically sustainable use of fish (including commercial and recreational fishing) and marine vegetation in marine parks, and*
 - (ii) to provide opportunities for public appreciation, understanding and enjoyment of marine parks'.*

The Port Stephens – Great Lakes Marine Park was declared effective from 1 December 2005. The Port Stephens – Great Lakes Marine Parks (PSGLMP) covers an area of approximately 98,000 hectares and includes offshore waters to the three nautical mile limit of state waters between Cape Hawk Surf Life Saving Club and Birubi Beach Surf Life Saving Club and all estuarine waters of Port Stephens and the Karuah River, the Myall River, Myall and Smiths Lakes and all of their creeks and tributaries to the line of tidal influence.

Four types of zones are used within marine parks with various uses permitted within each zone. The four zones are: sanctuary zones, habitat protection zones, general use zones and special purpose zones. The Myall River adjoining the site is within the general use zone. This zone permits the widest range of commercial and recreational fishing activities. To the south of the site, in the vicinity of Wallis Island, a habitat protection zone has been identified. To the north of the site a sanctuary zone has been nominated for part of the Myall River. Most commercial and recreational fishing activities are prohibited in the sanctuary zone and limited activity is permitted in the habitat protection zone.

While the MPA 1997 does not contain specific requirements in relation to land based development, the objects relate to conserving marine biological diversity and habitats. In this regard, the development of the site should not result in adverse impacts on the marine environment (this is also a requirement under SEPP 71). The key issue with respect to the proposed development and potential impact on the marine park relates to the management of stormwater drainage. Stormwater management and water quality control has been the subject of exhaustive studies to ensure negligible impacts on the marine environment. The Marine Park Authority has been consulted and advised that they had no interest in development above the Mean High Water Mark and that the existing man made water quality lake does not form part of the gazetted Port Stephens Marine Park. Stormwater management strategies are detailed in *Volume 3*.

4.2.5 *Threatened Species Conservation Act, 1995*

Schedules 1, 1A and 2 of the *Threatened Species Conservation Act 1995* (TSC Act) list species, populations or ecological communities of native flora and fauna considered to be threatened in New South Wales. The status of threatened species, populations or ecological communities listed in Schedules 1, 1A and 2 have been determined by a Scientific Committee as either:

- Endangered (Schedule 1);
- Critically Endangered (Schedule 1A); or
- Vulnerable (Schedule 2).

Section 5A of the EP&A Act specifies that for the purposes of the Act, and in particular the administration of sections 78A, 79B, 79C, 111 and 112 of the Act, in deciding whether there is likely to be a significant effect on threatened species, populations or ecological communities, or their habitats, seven factors must be taken into account along with any assessment guidelines. This assessment is referred to as the 'assessment of significance'.

Where a proposal is likely to significantly affect critical habitat of a threatened species, population or ecological community, or is in critical habitat, as defined by Part 3 of the TSC Act, a species impact statement must be prepared to accompany the development application.

Section 5A of the EP&A Act does not apply to projects assessed under Part 3A of the EP&A Act. There is no statutory requirement to undertake an "Assessment of Significance" for the project as it is being assessed under Part 3A. An Environmental Assessment (EA) is required Part 3A and must be prepared in accordance with the Director-General's environmental assessment guidelines.

The most recent Director-General's Environmental Assessment Requirements (DGEARs), pursuant to Section 75F of the EP&A Act, for the Riverside project were issued on 13 October 2010.

The relevant flora and fauna requirements within the DGEARs are provided below:

General Requirement 7. Consideration of impacts, if any, on matters of national environmental significance under the Commonwealth Environment Protection and Biodiversity Conservation Act 1999;

9.1: Provision of adequate and comprehensive baseline ecological data as described in section 2.6 of the PAC report;

9.2: Address the deficiencies in the previous ecological assessment identified in Section 2.7 of the PAC report;

9.3: Outline measures for the conservation of existing wildlife corridor values and/or connective importance of any vegetation on the subject land;

9.4: Address measures to protect and manage the SEPP 14 wetland and adjacent aquatic habitats;

9.7: Outline measures for the conservation of flora and fauna and their habitats within the meaning of the Threatened Species Conservation Act 1995, Native Vegetation Act, 2003, and the Fisheries Management Act, 1994 including, but not limited to Koala populations, and other EECs;

9.8: The EA must consider how the proposal has been managed to conserve flora and fauna habitats on the subject site and subject area. The measures proposed to mitigate any effects of the proposal must be provided, including any long term strategies to protect areas within the study area with threatened species. This may include elements

that restore or improve habitats. Pre-construction monitoring plans or on-going monitoring of the effectiveness of the mitigation measures must be outlined in detail; and

9.9: Prepare a details flora and fauna assessment of the proposed off-site offset area to enable an adequate assessment to be made of its ecological value and the adequacy of the proposed offset, taking account of 'Principles for use of Biodiversity Offsets in NSW'. (Note that the PAC concluded that offsets are not appropriate for some of the ecological values of this site and that development should be precluded in some areas to ensure that values are protected).

The Cumberland Ecology (2011) Biodiversity Mapping Report and GHD (2012) Biodiversity BioBanking Assessment report forms the Flora and Fauna component of the EA. .

4.2.6 *Fisheries Management Act, 1994*

The *Fisheries Management Act 1994* includes provisions to declare and list threatened species of fish and marine vegetation, endangered populations and ecological communities, and key threatening processes. These provisions are similar to those in the TSC Act and must be considered when referring to section 5A of the EP&A Act.

No species listed within the Fisheries Management Act (1994) are considered likely to occur in the Myall River. Also, wetlands and associated riverine and estuarine areas at the site will be protected within the current proposal. It is considered that there will be no significant impacts to the wetland or aquatic environments at or adjacent to the site.

4.2.7 *Protection of the Environment Operations Act 1997*

The *Protection of the Environment Operations Act 1997* (POEO Act) establishes the NSW environmental regulatory framework. The Act establishes a licensing regime for certain activities. Schedule 1 of the Act identifies activities and their relevant thresholds requiring licensing under the Act.

Extractive industries requiring licencing are listed in Schedule 1 as:

land-based extractive activity, meaning the extraction, processing or storage of extractive materials, either for sale or re-use, by means of excavation, blasting, tunnelling, quarrying or other such land-based methods: involving the extraction, processing or storage of more than 30,000 tonnes per year of extractive materials; and

water-based extractive activity, meaning the extraction of extractive materials, either for sale or re-use, by means of dredging or other such water-based methods: involving the extraction of more than 30,000 cubic metres per year of extractive materials.

Extractive materials are defined as clay, sand, soil, stone, gravel, rock, sandstone or similar substances that are not minerals within the meaning of the *Mining Act 1992*.

Construction of the project will involve the ground profiling of material on site (refer to Sheet 12 of the Engineering Plans, *Volume 2*), No material will be removed from site. Construction works, including excavation, will not occur all at once, but will be staged in accordance with the staging plan detailed in *Section 3.6*.

Part 3A, Section 75V(1) of the EP&A Act specifies that an environment protection licence under Chapter 3 of the POEO Act cannot be refused if it is necessary for carrying out an approved project and is to be substantially consistent with the approval under Part 3A of the EP&A Act.

As Concept Approval does not permit the actual carrying out of works on site, an environment protection licence is not required for Concept Approval. Any requirement and subsequent application, as may be required, for an environment protection licence, based on annual extraction in accordance with the staging plan will be assessed during future development application/s for the project.

There is confusion as to whether the proposed works constitute 'reuse' and it is understood OEHL is seeking legal advice to clarify this point. To address this issue legal advice was obtained from Conditis & Associates Lawyers (2011) (refer to *Annex P* in *Volume 1B*) identified that an EPL is not required as any scheduled activity is not premises based as it will be undertaken by mobile plant.

4.3 STATE PLANNING POLICIES AND GUIDELINES

4.3.1 State Environmental Planning Policy (Major Projects) 2005

State Environmental Planning Policy (Major Development) 2005 is the principle instrument for nominating projects to be determined by the Minister for Planning under Part 3A of the EP&A Act. Schedule 2 of the Major Development SEPP specifies the following as development to which Part 3A of the EP&A Act applies:

'subdivision for residential purposes of land that is not in the metropolitan coastal zone (unless it is wholly or partly in a sensitive coastal location) into more than 100 lots'

In accordance with section 75D of the EP&A Act approval from the Minister for Planning is required for a development which has been declared to be a project under Part 3A of the EP&A Act. Following the introduction of Part 3A of the *Environmental Planning and Assessment Act 1979* (EP&A Act) and *State Environmental Planning Policy (Major Development) 2005*, the Minister for

Planning confirmed by letter dated 16 September 2008 (REF: 904 1553) that the project was a matter to which Part 3A of the *Environmental Planning and Assessment Act, 1979* (EP&A Act) applies, and that an application may be lodged with the Director General. In a letter dated 12 August 2010 ERM sought further confirmation that the proposed development would be considered to be a major project under Clause 6 of the Major Projects State Environmental Planning Policy.

On 16 September 2010 the Deputy Director General, Development Assessment and Systems Performance revoked the previous Minister's declaration issued on 4 September 2008, authorised the submission of a Concept Plan for the proposed development and declared the project as being one to which Part 3A of the EP&A Act applies for the purpose of section 75B of that Act. Director Generals Requirements for the preparation of an Environmental Assessment for the Concept Plan were issued on 14 October 2010.

Schedule 6A of the EP&A Act outlines transitional arrangements for projects formally identified as Part 3A projects prior to the repeal of Part 3A on 1 October 2011. Clause 2 of Schedule 6A identifies the Concept Plan Application as a Transitional Part 3A project when:

"environmental assessment requirements for approval to carry out the project, or for approval of a concept plan for the project, were last notified or adopted within 2 years before the relevant Part 3A repeal date".

Clause 3 of Schedule 6A identifies that Part 3A of EP&A Act (as in force immediately before the repeal of that Part and as modified under this Schedule after that repeal) continues to apply to and in respect of a transitional Part 3A project.

4.3.2 State Environmental Planning Policy (Infrastructure) 2007

State Environmental Planning Policy No 11 – Traffic Generating Development (SEPP 11) was repealed on the 1st January 2008. The planning provisions previously within SEPP 11 have been updated and incorporated into *State Environmental Planning Policy (Infrastructure) 2007*, which came into effect on the 1st January 2008. Schedule 3 of the Infrastructure SEPP outlines the planning requirements for traffic generating development and identifies the following requirements for the subdivision of land based on size and/or capacity:

- site with access to any road: 200 or more allotments where the subdivision includes the opening of a public road; or
- site with access to a classified road or to a road that connects to a classified road (if access within 90m of connection, measured along alignment of connecting road): 50 or more allotments.

The Riverside at Tea Gardens development will result in the creation of greater than 200 allotments and will include the construction and dedication of public roads to service the development. The provisions of the Infrastructure SEPP therefore apply to the development and, in accordance with Clause 104 of the Infrastructure SEPP, the application is required to be referred to the NSW Roads and Traffic Authority. A revised Traffic Impact Assessment has been completed (refer to *Volume 5*).

4.3.3 *State Environmental Planning Policy No 14 - Coastal Wetlands (SEPP 14)*

State Environmental Planning Policy No 14 (SEPP 14) - Coastal Wetlands aims to preserve and protect wetlands.

There is a SEPP 14 Wetland within the Riverside at Tea Gardens site (SEPP 14 Wetland No. 746 is located adjoining the Myall River and within the eastern portion of the site). The revised concept plan proposes the removal of Precinct 1 which included 71 lots previously located in the south east portion of the site adjoining the wetland. This will now become part of the conservation area and will reduce the potential impact of the development on the wetland.

Clause 7(1) of SEPP 14 states:

“(1) In respect of land to which this policy applies, a person shall not:

- (a) clear that land,*
- (b) construct a levee on that land,*
- (c) drain that land, or*
- (d) fill that land,*

except with the consent of the council and the concurrence of the Director.”

Clearing includes tree removal, lopping and lower storey native vegetation removal (i.e. underscrubbing). Development consent is required for such works under SEPP 14, with the exception of Part 3A applications. No development is proposed within the SEPP 14 Wetland as part of the revised Concept Plan.

4.3.4

State Environmental Planning Policy No 44 - Koala Habitat Protection (SEPP 44)

SEPP 44 encourages the proper conservation and management of areas of vegetation that provide habitat for koalas to ensure a permanent free-living population over their present range and reverse the current trend of koala population decline.

Core koala habitat is defined as “...an area of land with a resident population of koalas, evidenced by attributes such as breeding females (that is, females with young) and recent sightings of and historical records of a population.” If a site is identified as a core koala habitat a Koala Plan of Management must be prepared for the site before development consent may be granted. The SEPP does not specify that a Koala Plan of Management would be required for Part 3A Projects.

Specialist surveys for the Koala have however been undertaken as part of the environmental assessment of the site (see *Volume 4*). The surveys found that the proposal is unlikely to impact on koalas in the Hawks Nest/Tea Gardens locality. A Koala Habitat Management Strategy (see *Volume 4*) has been prepared for the site, the provisions of which will help inform the final offset strategy.

4.3.5

State Environmental Planning Policy No 50 - Canal Estate Development (SEPP 50)

SEPP 50 prohibits canal estate development as defined in the Policy. Clause 3 defines canal estate development as development that:

- “(a) incorporates wholly or in part a constructed canal, or other waterway or waterbody, that is inundated by or drains to a natural waterway or natural waterbody by surface water or groundwater movement (not being works of drainage, or for the supply or treatment of water, that are constructed by or with the authority of a person or body responsible for those functions and that are limited to the minimal reasonable size and capacity to meet a demonstrated need for the works), and*
- (b) includes the construction of dwellings (which may include tourist accommodation) of a kind other than, or in addition to:*
 - (i) dwellings that are permitted on rural land, and*
 - (ii) dwellings that are used for caretaker or staff purposes, and*
- (c) requires the use of a sufficient depth of fill material to raise the level of all or part of that land on which the dwellings are (or are proposed to be) located in order to comply with requirements relating to residential development on flood prone land.”*

Canal estate development does not include drainage works that are '*limited to the minimal reasonable size and capacity to meet a demonstrated need for the works*'.

The previous scheme involved the extension of the existing detention lake and the creation of three separate freshwater basins in addition to a number of separate smaller water quality control ponds and basins.

No extension of the existing lake system is proposed under the revised concept plan. There will also be no interaction between the saltwater and freshwater basins and the single existing drain outlet to the Myall River will be retained, with no new connection proposed. The changes to the water management regime as well as the form of the development ensure that it is not a canal estate development as defined under SEPP 50 (refer to legal advice reproduced in *Volume 1B; Annex L*).

4.3.6 *State Environmental Planning Policy No 71 – Coastal Protection (SEPP 71)*

State Environmental Planning Policy 71 – Coastal Protection (SEPP 71) aims to ensure that development in the NSW Coastal Zone is appropriate and suitably located and that there is a consistent and strategic approach to coastal planning and management. It provides a clear development assessment framework for the coastal zone.

The Riverside at Tea Gardens site is within the coastal zone. The parts of the site that are within 100 metres of the Myall River and Wobbegong Bay are defined as 'sensitive coastal locations' under SEPP 71. No residential development is proposed within a sensitive coastal location.

Clause 8 of SEPP 71 specifies the matters that should be taken into consideration when a consent authority determines a development application to carry out development on land to which the SEPP applies.

Table 4.2 provides an assessment of the concept plan against the matters for consideration under SEPP 71.

Part 4 relates to development control on land to which the SEPP applies and contains the following provisions:

- Flexible zone provisions of an environmental planning instrument are not to apply to development within the coastal zone.

The proposed development is not relying on flexible zone provisions and is permissible with consent within the existing 2(f), 7(a) and 7(b) zones.

- Public access is not to be impeded or diminished to or along the coastal foreshore.

The proposed development will not affect public access to the foreshore. There is no existing right of access over the site.

- Effluent is not to be disposed of by a non-reticulated system if it is likely to have a negative effect on the water quality of the sea or any nearby beach, or an estuary, a coastal lake, a coastal creek or other similar body of water, or a rock platform.

Effluent is to be disposed of by way of a reticulated system.

- Untreated stormwater is not to be discharged into the sea or other coastal waterbody or onto a rock platform.

Untreated stormwater will not be discharged to the Myall River. *Volume 3* details the proposed management of stormwater associated with the development.

Part 5 relates to Master Plans. Clause 18 specifies that a consent authority must not grant consent for certain forms of subdivision within the coastal zone unless the Minister for Planning has adopted a Master Plan for the land or, after consulting the Natural Resources Commission, has waived the need for a Master Plan to be adopted because of the nature of the development concerned, the adequacy of other planning controls that apply to the proposed development or for other such reasons as the Minister considers sufficient.

An application for a Master Plan waiver under SEPP 71 has been made. The waiver application has been prepared on the basis that the development controls proposed in this Concept Plan application, if approved, would represent adequate planning controls as identified in SEPP 71.

Table 4.2 SEPP 71 Matters for Consideration

Consideration	Comments
Part 1 Clause 2 - Aims of SEPP 71	
a) to protect and manage the natural, cultural, recreational and economic attributes of the New South Wales coast.	The development of the site for urban purposes would enhance the cultural and economic attributes of the Tea Gardens / Hawks Nest area through the appropriate provision of housing and associated community facilities. Substantial areas of the 2(f) zoned land are proposed to be protected and enhanced as open space / wildlife movement corridors, over and above those already protected within the 7(a) and 7(b) zones.
b) to protect and improve existing public access to and along coastal foreshores to the extent that this is compatible with the natural attributes of the coastal foreshore.	The development of the site for residential purposes would not have an impact on public access to and along the foreshore as there is no existing legal access over the property. The land adjoining the Myall River is zoned for environmental protection and is not proposed for development. The future residential subdivision and tourist development may assist in improving access to the Myall River.
c) to ensure that new opportunities for public access to and along coastal foreshores are identified and realised to the extent that this is compatible with the natural attributes of the coastal foreshore.	Refer to above.
d) to protect and preserve Aboriginal cultural heritage, and Aboriginal places, values, customs, beliefs and traditional knowledge.	A revised Aboriginal Heritage Assessment has been prepared and is detailed in Volume 5. Two sites (one previously recorded) were identified in site. The proposed development will ensure the conservation and ongoing management of the sites in accordance with a management plan to be prepared in consultation with the Karuah Local Aboriginal Land Council.
e) to ensure that the visual amenity of the coast is protected.	The expected visual impacts associated with the use of the site for urban purposes on the amenity of the coast are expected to be negligible. Refer to <i>Section 5. 2</i> for the visual impact assessment.

Consideration	Comments
f) to protect and preserve beach environments and beach amenity.	The development site is not in proximity to a beach.
g) to protect and preserve native coastal vegetation.	The impacts of the development of the site on coastal vegetation are documented in <i>Volume 4</i> . Native coastal vegetation will be protected and preserved where practicable.
h) to protect and preserve the marine environment of New South Wales.	Appropriate stormwater management measures are proposed to minimise impacts on receiving environments (refer to <i>Volume 3</i>).
i) to protect and preserve rock platforms.	No rock platforms are located within the vicinity of the site.
j) to manage the coastal zone in accordance with the principles of ecologically sustainable development (within the meaning of section 6(2) of the <i>Protection of the Environment Administration Act 1991</i>). The principles of ecological sustainable development are:	<p>The proposed development seeks to maximise the site's potential whilst at the same time protecting its environmentally sensitive areas. The proposal promotes the use of ecologically sustainable development principles by:</p> <ul style="list-style-type: none"> • incorporating energy efficient subdivision design and lot sizing and orientation to maximise solar access; • urban design principles incorporating walkable neighbourhoods and linkages between communities; • the adoption of a total water cycle management design philosophy; • the Habitat Conservation Area and SEPP 14 wetland which will preserve significant ecological communities and provide for ecological corridors to ensure that the ecological values of the site are conserved for the future; • using engineering, architectural and other best practices to reduce development impacts; • protecting Aboriginal archaeological sites of high archaeological significance; • utilising existing service infrastructure; • creating opportunities for public transport usage thereby improving the efficiency of local and regional services; and • providing additional residential land to meet increasing demand within the constraints of the site.
i) precautionary principle; ii) intergenerational equity; iii) conservation of biological diversity and ecological integrity; and iv) improved valuation, pricing and incentive mechanisms	

Consideration	Comments
k) to ensure that the type, bulk, scale and size of development is appropriate for the location and protects and improves the natural scenic quality of the surrounding area.	Architectural guidelines have been prepared to ensure that the natural and scenic quality of the area is protected. The proponent has conducted design forums with the community as part of the preparation of the guidelines.
l) to encourage a strategic approach to coastal management.	The site is identified in Council's Conservation and Development Strategy as suitable for residential development.
Part 2 Clause 8 – Matters for Consideration	
(b) existing public access to and along the coastal foreshore for pedestrians or persons with a disability should be retained and, where possible, public access to and along the coastal foreshore for pedestrians or persons with a disability should be improved.	There is no existing public access to the foreshore for pedestrians or persons with a disability. The proposal in its current form will not restrict any likely future public access to the foreshore.
(c) opportunities to provide new public access to and along the coastal foreshore for pedestrians or persons with a disability.	Opportunities to provide public access to the foreshore for pedestrians would be problematic given the wetlands in this area, however the project proposes the construction of footpaths throughout the development and within the tourist precinct in the north east portion of the site.
(d) the suitability of development given its type, location and design and its relationship with the surrounding area.	A number of environmental assessments have been carried out over the site that have identified the site's opportunities and constraints as detailed within <i>Chapter 3</i> . The proposed development is an extension of the existing Riverside Estate and will complement existing development in the area.
(e) any detrimental impact that development may have on the amenity of the coastal foreshore, including any significant overshadowing of the coastal foreshore and any significant loss of views from a public place to the coastal foreshore.	The development of the site for residential purposes is a sufficient distance from the Myall River and of a low scale such that it would not affect the amenity of the coastal foreshore.

Consideration	Comments
(f) the scenic qualities of the New South Wales coast, and means to protect and improve these qualities.	The expected visual impacts associated with the use of the site for residential purposes has been assessed and are considered to be minor.
(g) measures to conserve animals (within the meaning of the <i>Threatened Species Conservation Act 1995</i>) and plants (within the meaning of that Act), and their habitats.	The impacts of the proposed development on flora and fauna are addressed in <i>Chapter 6</i> and <i>Volume 4</i> .
(h) measures to conserve fish (within the meaning of Part 7A of the <i>Fisheries Management Act 1994</i>) and marine vegetation (within the meaning of that Part), and their habitats.	The proposed development will not impact on fish and marine vegetation. Refer to the ecological assessment and stormwater management assessment contained in <i>Chapter 6</i> , <i>Volume 3</i> and <i>Volume 4</i> .
(i) existing wildlife corridors and the impact of development on these corridors.	Refer to the ecological assessment in <i>Volume 4</i> . The proposal will not impact on identified wildlife corridors and incorporates corridors to link into the existing system.
(j) the likely impact of coastal processes and coastal hazards on development and any likely impacts of development on coastal processes and coastal hazards.	Potential hazards associated with sea level rise and acid sulphate soils are detailed in <i>Chapter 6</i> , <i>Volume 3</i> and <i>Volume 4</i> .
(k) measures to reduce the potential for conflict between land-based and water-based coastal activities.	The proposal would not result in any conflict between land-based and water-based coastal activities as the proposed development is located a sufficient distance from the coastal foreshore.
(l) measures to protect the cultural places, values, customs, beliefs and traditional knowledge of Aboriginals.	The proposal will not impact on any known cultural places, values, customs, beliefs or traditional knowledge of Aboriginal people.
(m) likely impacts of development on the water quality of coastal waterbodies.	The likely impacts associated with the proposed use of the site for residential purposes on the quality of ground and surface water has been assessed and considered to be acceptable. Refer to <i>Chapter 6</i> and <i>Volume 3</i> .

Consideration	Comments
(n) the conservation and preservation of items of heritage, archaeological or historic significance.	No items of archaeological or historic significance will be impacted by the proposed development. Refer to Aboriginal Heritage Assessment in <i>Volume 5</i> .
(o) only in cases in which a council prepares a draft local environmental plan that applies to land to which this Policy applies, the means to encourage compact towns and cities.	Not applicable to this site.
(p) only in cases in which a development application in relation to proposed development is determined:	
(i) the cumulative impacts of the proposed development on the environment.	The cumulative impact of the Concept Plan on the environment is detailed throughout the impact assessment in <i>Chapter 6</i> . The assessment has concluded that the proposal will have acceptable impacts on the environment.
(ii) measures to ensure that water and energy usage by the proposed development is efficient.	Residential development on the site will comply with BASIX requirements.

4.3.7

New South Wales Coastal Policy 1997

The *NSW Coastal Policy 1997* is a guide for land use decision making in the designated coastal zone. It recognises that the coast is the focus of intense pressures from human activity and that there is a large range of competing interests for its resources. A decision making approach based on ecologically sustainable development seeks to reconcile these competing interests. The *NSW Coastal Policy 1997* aims to:

- protect, rehabilitate and improve the natural environment;
- protect and conserve cultural heritage;
- provide for public access and use;
- recognise and accommodate natural processes;
- provide for ecologically sustainable development and use of resources;
- provide information to enable effective management;
- protect and enhance aesthetic qualities;
- provide for ecologically sustainable human settlement; and
- integrate planning and management.

The *NSW Coastal Policy 1997* discourages the development of land with high conservation value or other constraints where development would not be consistent with the aims of the policy. The policy also provides principles to guide future development in proposed development precincts that balance social, ecological and economic considerations. The proposal in its revised form is consistent with the aims, principles and goals of the Policy.

The revised Concept Plan incorporates these aims into its design. The proposed development's consistency to the *NSW Coastal Policy* is detailed in *Table 1* within *Annex M* of *Volume 1B*.

4.3.8

Coastal Design Guidelines for NSW

The *Coastal Design Guidelines for NSW* was produced in 2003 by the NSW Coastal Council. The document is designed to provide a framework for discussion and decision making involving coastal planning, design and development proposals between all stakeholders in the context of caring for the natural beauty and amenity of coastal beaches, headlands, waterways and ecologies upstream.

Part 1 of the Guidelines defines seven coastal settlement types which can be used to analyse and understand urban development along the NSW coast. Part 2 of the Guidelines identifies five principles for coastal settlement

structure. These principles and their elements are presented as best practice outcomes and form the basis for understanding, debating and designing the present and future form of coastal settlements in NSW. The five principles for coastal settlement structure are:

- defining the footprint and boundary of the settlement;
- connecting open space;
- protecting natural edges;
- reinforcing the street pattern; and
- appropriate buildings in a coastal context.

The revised Concept Plan incorporates these principles into its design. Design guidelines are discussed further in the urban design and site analysis section in *Chapter 3*. The proposed development is generally consistent with the *Coastal Design Guidelines for NSW* as detailed in *Table 2* within *Annex M* of *Volume 1B*.

4.3.9 New South Wales Sea Level Rise Policy Statement and Guideline

NSW Sea Level Rise Policy Statement (2009) specifies sea level rise planning benchmarks of an increase above 1990 mean sea levels of 40 cm by 2050 and 90 cm by 2100 and outlines that responsibility for coastal protection works rests with landowners, both public and private.

The NSW Coastal Planning Guideline: Adapting to Sea Level Rise (2010) has been prepared to provide guidance on how sea level rise is to be considered in land use planning and development assessment in coastal NSW. The guideline is structured around the implementation of six coastal planning principles for the consideration of sea level rise being:

Principle 1 – Assess and evaluate coastal risks taking into account the NSW sea level rise planning benchmarks.

Principle 2 – Advise the public of coastal risks to ensure that informed land use planning and development decision-making can occur.

Principle 3 – Avoid intensifying land use in coastal risk areas through appropriate strategic and land use planning.

Principle 4 – Consider options to reduce land use intensity in coastal risk areas where feasible.

Principle 5 – Minimise the exposure of development to coastal risks.

Principle 6 – Implement appropriate management responses and adaptation strategies, with consideration for the environmental, social and economic impacts of each option.

The Concept Plan is generally consistent with the principles of the Statement and Guideline as detailed in *Table 2* within *Annex M* of *Volume 1B*.

4.3.10 *New South Wales State Groundwater Policy Framework Document*

The purpose of the Groundwater Framework Policy document is to provide a clear policy direction on the ecologically sustainable management of the State's groundwater resources. The focus of the Policy is on water below the ground surface in a geological structure or formation, and on the ecosystems from which these waters are recharged or into which they discharge. The Framework document is an overarching policy under which the following three policies sit:

- Groundwater Quality Protection Policy;
- Groundwater Dependent Ecosystems Policy; and
- Groundwater Quantity Management Policy.

The Concept Plan is generally consistent with the principles of the Framework document as detailed in *Table 10* within *Annex M* of *Volume 1B*.

4.3.11 *New South Wales Groundwater Quality Protection Policy 1998*

The NSW Groundwater Quality Protection Policy 1998 is specifically designed to protect valuable groundwater resources against pollution by ensuring that the sustainability of groundwater resources and their ecosystem support functions are given explicit consideration in resource management decision making.

The Concept Plan is generally consistent with the principles of the policy as detailed in *Table 7* within *Annex M* of *Volume 1B*.

4.3.12 *New South Wales Groundwater Dependent Ecosystems Policy 2002*

The NSW Groundwater Dependent Ecosystems Policy is designed to protect the valuable ecosystems of which rely on groundwater for survival so that, wherever possible, the ecological processes and biodiversity of these dependent ecosystems are maintained or restored, for the benefit of present and future generations. The policy provides guidance on how to protect and managed these valuable systems in a natural sense.

The Concept Plan is generally consistent with the principles of the policy as detailed in *Table 8* within *Annex M* of *Volume 1B*.

4.3.13 *New South Wales Groundwater Quantity Management Policy (Draft)*

The Quantity Management Policy aims to provide a framework for the sustainable management of groundwater by providing policy principles to guide future decision making, planning and operational practice in relation to groundwater quantity protection, including providing objectives relating to the sustainable management of groundwater extractions and their impact on dependent ecosystems; and establishing the basis for sharing the State's groundwater resources.

The Concept Plan is generally consistent with the principles of the policy as detailed in *Table 9* within *Annex M* of *Volume 1B*.

4.4 *REGIONAL PLANNING INSTRUMENTS, STRATEGIES AND STUDIES*

4.4.1 *Mid North Coast Regional Strategy*

The *Mid North Coast Regional Strategy* (MNCRS) was adopted in March 2009. It provides guidance for local planning in the eight local government areas of Clarence Valley, Coffs Harbour, Bellingen, Nambucca, Kempsey, Port Macquarie–Hastings, Greater Taree and Great Lakes.

Tea Gardens / Hawks Nest is at the southern end of the area included in the MNCRS and are identified as 'towns' that serve a limited catchment and have a small to medium scale concentration of retail, health and other services with lower density residential. They are recognised as relying on major regional centres and major towns for high order services, retailing and employment.

The waters adjacent to Tea Gardens / Hawks Nest are identified as 'Marine Park / Protection' in the MNCRS. The concept plan includes water management measures to ensure that quality of surface and ground water is not reduced. The concept plan also includes a buffer to the wetland, to protect its function and value.

The Mid North Coast is recognised as one of the fastest and most consistent growth areas of NSW. The strategy recognises the growing pressure for urban development in the Great Lakes and greater Taree areas, with recent road upgrades and development activity suggesting that "...these areas will experience revitalised in-migration and population growth" (DoP, 2007).

The 'strategy at a glance' aims to, amongst other objectives:

- "cater for a housing demand of up to 59,600 new dwellings by 2031 to accommodate the forecast population increase of 94, 000 and any anticipated growth beyond this figure arising from increased development pressures in the southern part of the Region"; and

- *“ensure that new housing meets the needs of smaller households and an ageing population by encouraging a shift in dwelling mix and type so that 60 percent of new housing will be in Greenfield location and 40 percent in existing urban areas” (DoP, 2007).*

It states that the demand to live near the coast will continue to result in the majority of the anticipated growth being accommodated in existing identified growth areas, including Tea Gardens – Hawks Nest.

The MNCRS sets out neighbourhood planning principles that include:

- *“A range of land uses to provide the right mix of housing, jobs, open space, recreational space and green space;*
- *Easy access to major centres with a full range of shops, recreational facilities and services along with smaller village centres and neighbourhood shops;*
- *Jobs available locally and regionally, reducing travel times and the demand for transport services;*
- *Street and suburbs planned so that residents can walk to shops for their daily needs;*
- *A wide range of housing choices to provide for different needs and incomes. Traditional houses on their own block will be available along with smaller lower maintenance homes, units and terraces for older people and young single or couples; and*
- *Conservation land in and around development sites to help protect biodiversity and provide open space for recreation” (DoP, 2009).*

The Concept Plan meets the aims of the MNCRS and adopts the planning principles through its creation of a greenfield development with a range of lot sizes to accommodate different housing types that are linked by an open space network that retains wildlife corridors and buffers to the wetlands. The residential lots also provide for home based business which allows people to work at home, thereby reducing the need to travel and providing employment diversity in the Tea Gardens - Hawks Nest area.

The residential lots are close to a range of commercial, community and retail services in the new town centre at the corner of Myall Street and Shoreline Drive. The town centre can be accessed from the residential area within Riverside, by the internal streets or by pedestrian and cycle paths located in the open space network.

The *Mid North Coast Regional Strategy* includes Sustainability Criteria against which new proposals are to be assessed. An assessment of the Riverside at Tea Gardens development against the Sustainability Criteria has been undertaken and is detailed in *Annex M of Volume 1B*.

The following potential partial consistency issues are noted:

- the *Mid-North Coast Regional Strategy* requires consistency with government approved Regional Conservation Plan (if available). The Mid North Coast Regional Conservation Plan has been released as a working draft. The draft plan provides maps detailing priority conservation and restoration areas, however the applicability of such areas to the proposed Riverside site is unclear due to poor mapping within the draft plan. Given the uncertainty regarding the timing and final form of the conversion of the draft plan to a final plan, it is difficult to make any definitive comments over and above the comments made in the Biodiversity Mapping Report and the Biodiversity BioBanking Assessment which details the proposed Riverside development's likely impact on ecological corridors in *Section 6.9* and *Volume 4*;
- the *Mid-North Coast Regional Strategy* requires development to maintain or improve existing environmental condition for water quality. An updated Integrated Water Management Assessment is provided in *Volume 3*. This assessment included a comparison of the saline lake conditions under the integrated water management scheme (Scheme 8) compared with existing saline lake conditions and concluded:
 - in the near term the lake will become less brackish due to the requirement that the existing outlet remain unchanged. In the longer term sea level rise and increasing tidal inflows will increase the salinity of the lake. In the event that a sea level rise of 0.9m or greater occurs then the lake will become part of the Myall River and salinity levels would be expected to match the salinity of the Myall River;
 - the Dissolved Oxygen (DO) levels in bottom waters and DO saturation would improve slightly;
 - TN (Total Nitrogen) and TP (Total Phosphorus) concentrations would increase slightly;
 - algal concentrations would be comparable to existing conditions;
 - salinity and DO saturation would remain within the ANZECC 2000 range; and
 - TP, TN and algal concentrations would remain under ANZECC 2000 trigger values.

4.4.2

North Coast Urban Design Guidelines

The Department of Planning released the *North Coast Urban Design Guidelines* in 2009. The guidelines seek to facilitate urban growth as identified in the *Mid North Coast Regional Strategy* by providing guidance on design strategies to inform the layout of future settlements, expansions of existing settlement and

the design of new built form in order to maintain and improve the urban design characteristics of the region.

The guidelines are comprised of two parts:

- Part One: guidance in undertaking assessment of the existing attributes of settlements in order to maintain the character of the settlement throughout future settlement growth; and
- Part Two: principles and strategies for managing environmentally, economically and socially sustainable settlement growth. It addresses growth management in three typical scenarios: growth through consolidation, growth at the fringe and growth in new release or 'greenfield' locations. The guidelines address urban design issues at the whole of settlement, street and block, and individual building scale.

The guidelines identify the following key characteristics of towns (which Tea Gardens is defined as under the *Mid North Coast Regional Strategy*):

- towns still maintain a strong relationship with the surrounding natural landscape;
- towns typically offer substantial areas of public open space, parks and sports fields;
- towns provide facilities and services to support the surrounding rural communities and can also provide a historical focus and relevance for tourism and the local community;
- the streets in the town centres are typically characterised by a formal grid pattern with central and convenient access to the facilities, services and public places. As the settlement extends beyond the centre, the grid often becomes less formal, responding to natural features, transport infrastructure and surrounding farmland; and
- buildings in town centres typically reflect an historical and environmental response to the region in which they are settled. The character of the buildings within the town can be influenced by climate, traditional industry, farming needs, density of surrounding villages and employment opportunities.

A number of design principles addressing urban design issues at the whole of settlement, street and block, and individual building scale are detailed in the strategy. The Concept Plan is generally in compliance with the *North Coast Urban Design Guidelines* as detailed within *Table 4 of Annex M of Volume 1B*.

4.5.1

Great Lakes Local Environmental Plan 1996

Great Lakes Local Environmental Plan 1996 (Great Lakes LEP) is the principal local environmental planning instrument governing land use within the Great Lakes local government area (LGA).

Zones

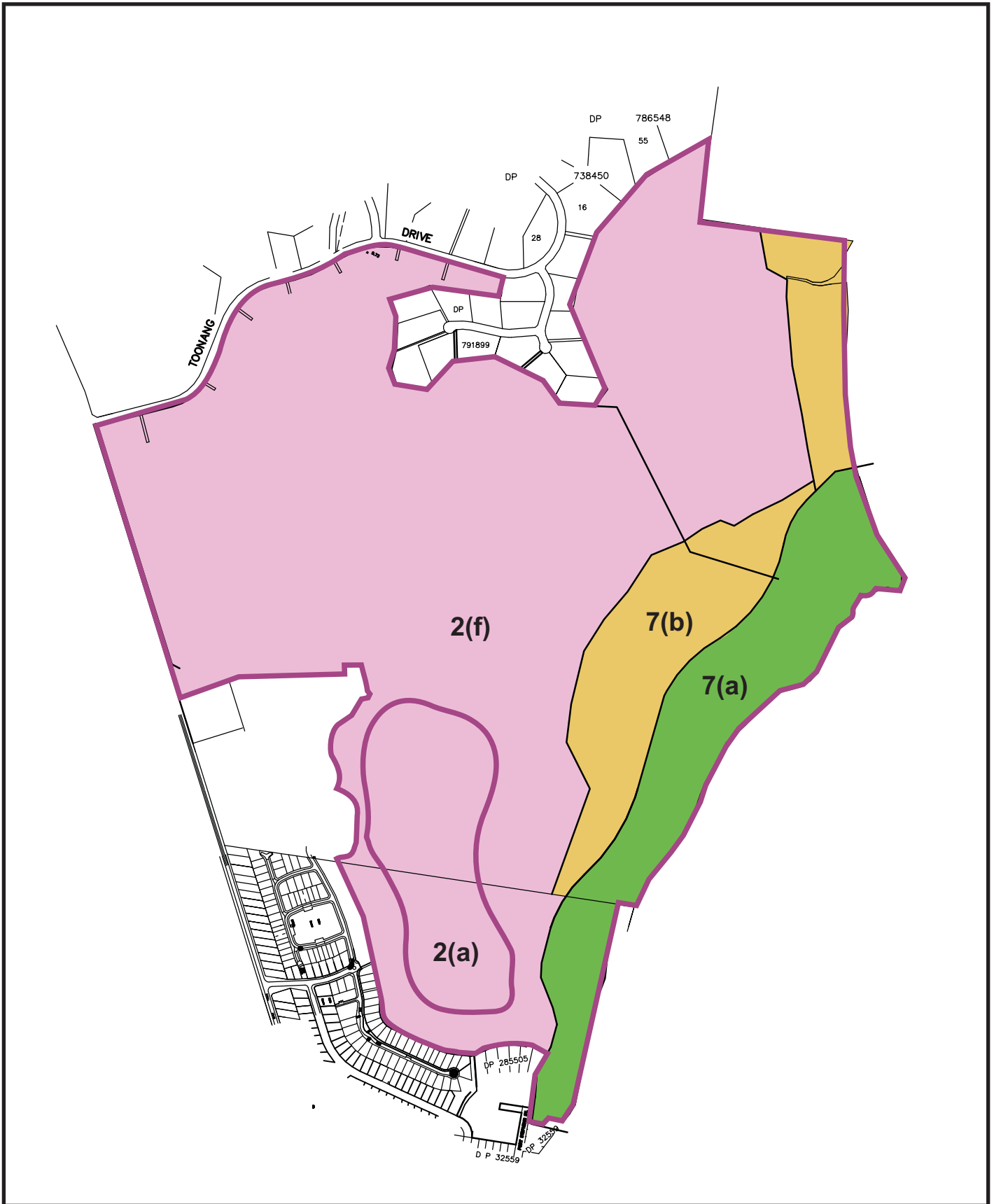
The Riverside at Tea Gardens site was rezoned by Council in 2000 from 1(a) *Rural* to part 2(f) – *Mixed Residential-Commercial*, part 7(a) *Wetlands and Littoral Rainforest* and part 7(b) *Conservation*. The majority of the site is contained within the 2(f) zone. The 7(a) zone is adjacent to the Myall River and contains SEPP 14 Wetlands. The 7(b) zone is the designated buffer to the wetlands. *Figure 4.1* details the zoning of the site.

2(f) – Mixed Residential-Commercial Zone

The objectives of the Residential 2(f) – Mixed Residential-Commercial zone are as follows:

- “(a) to enable mixed development comprised of accommodation for tourists and permanent residents generally not exceeding two storeys in height, and*
- (b) to provide for recreational, retail and commercial uses and a limited range of other uses which:*
 - (i) are complementary with a residential environment, and*
 - (ii) are unlikely to place demands on services beyond the level reasonably* The

The proposal is permissible with consent within the 2(f) zone and consistent with the objectives of the zone. The development provides a mix of tourist and residential development. Low density tourist accommodation is proposed within the north-eastern portion of the site. The permanent residential component generally includes two storey dwellings which complement the low density coastal community profile of the Tea Gardens and Hawks Nest area.



Legend

- Riverside at Tea Gardens Site Boundary
- Great Lakes Draft Amendment No.44 LEP 1996**
- 2(a) Low Density Residential
- 2(f) Mixed Residential/Commercial
- 7(a) Wetlands Zone
- 7(b) Conservation Zone

Source:
Great Lakes Draft Amendment No.44 LEP 1996

R0	Preliminary Issue	01-12-11	JD
Suffix	Revisions	Date	Init

Figure 4.1

Zoning Map

Client:	Crighton Properties Pty Ltd		
Project:	Concept Plan 2011 Environmental Assessment Riverside at Tea Gardens		
Drawing No:	0043707h_CP_EA_11_C011_R0.cdr		
Date:	01/12/2011	Drawing size:	A4
Drawn by:	JD	Reviewed by:	SO'C
Scale:	Not to Scale		

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7(a) Wetlands and Littoral Rainforest Zone

The objective of the Environmental Protection 7(a) Wetlands and Littoral Rainforest zone is:

"...to restrict the type and scale of development to that which is compatible with the special ecological or scientific values of coastal wetlands and littoral rainforests and which is unlikely to:

- (a) have a significant detrimental effect on the growth of native plant communities, or*
- (b) adversely affect the survival of native wildlife populations, or*
- (c) adversely affect the provision and quality of habitats for either indigenous or migratory species."*

No development is proposed within the 7(a) Wetland zone, ensuring that the SEPP 14 Wetland is preserved, and allowing for the continued growth of native plant communities and the provision of habitat for native species and populations.

The Riverside site is largely disturbed due to its previous use as agricultural grazing lands. A site analysis identified remnant vegetation along the northern boundary of the site adjoining the 7(a) and 7(b) wetland zones. The proposed development has been designed to include a wildlife corridor linking the wetland zone to the existing significant vegetation located along the northern boundary of the site. This link will allow native wildlife to migrate between the two habitat zones with minimal interaction with surrounding development.

7(b) Conservation Zone

The objective of the 7(b) Conservation zone is:

"...to enable a limited range of development (including tourist facilities) on land possessing special aesthetic or conservation values where:

- (a) it can be demonstrated that the development can be carried out in a manner that minimises risks from natural hazards; and*
- (b) the development functions efficiently; and*
- (c) the development does not prejudice other economic development; and*
- (d) the development does not significantly detract from the scenic quality of the land within the zone; and*
- (e) the development is unlikely to have a significant detrimental effect on the growth of native plant communities; and*

- (f) *the development is unlikely to affect the survival of native wildlife populations; and*
- (g) *the development is unlikely to adversely affect the provision or quality of habitats for either indigenous or migratory species.*

The 7(b) Conservation zone provides a designated buffer to the adjacent 7(a) Wetlands and Littoral Rainforest zone (SEPP 14 wetland) located between the buffer and the Myall River, as illustrated in *Figure 4.1*. It also provides a buffer between the Myall River and the 2(f) - Mixed Residential-Commercial zone in the north east portion of the site.

The proposal excludes development within the 7(b) Conservation zone adjacent to the SEPP 14 wetland. A pathway to be constructed adjacent to, but not within the 7(b) Conservation zone will provide for controlled public access to the foreshore area outside the conservation area, thereby minimising informal public access throughout the 7(b) buffer lands and SEPP 14 wetland. An asset protection zone to be constructed within the 2(f) zone, adjacent to the 7(b) buffer lands, will provide additional separation to the conservation area, minimising edge effects.

Development within the 7(b) Conservation zone, being limited to the creation of the foreshore park, will ensure the scenic quality of the zone is maintained. The conservation of the zone will allow for the continued growth of native plant communities and provide habitat for native species and populations and provides an important link to the Myall River.

Special Provisions – Clause 33A Development at Myall Quays (Riverside at Tea Gardens)

Clause 33A relates to development at Myall Quays, which is now known as Riverside at Tea Gardens. The objective of Clause 33A is to ensure that appropriate commercial and retail facilities are provided on the site and that any water body is maintained under the provisions of a community or neighbourhood scheme.

Subclause 33A(1) relates to the construction a shopping centre at Myall Quays and limits the gross floor area of any such centre to 3000 square metres. The revised concept plan does not propose any commercial development.

Subclause 33A(2) relates to the impact on adjoining conservation areas and the Myall River of the development of a lake or other water body at Myall Quays. It states that Council must have the concurrence of the Department of Planning before granting consent to such a development, and that the Department must take into consideration the environmental impacts of such a development on the surrounding wetlands, wet heath areas and the Myall River.

On 24 February 2004, the Minister for Planning made a declaration under Section 76A(7)(b) of the EP&A Act that made any waterbody proposed on parts of the Riverside site 'State Significant Development'. It is noted that Section 76A(7) has been repealed and a reference in any Act or instrument to State significant development within the meaning of the Act is taken to be a reference to a project to which Part 3A of this Act applies.

4.5.2 *Development Control Plans*

Development Control Plan 22 – Myall Quays Estate

Development Control Plan 22 – Myall Quays Estate (DCP 22) applies to land referred to in this report as 'Riverside at Tea Gardens'. DCP 22 provides management principles and actions that proposed development should follow. The management principles and actions relate to:

- conservation of wetland and native species associations;
- earthworks, hydraulic assessment and waterbodies;
- water quality;
- infrastructure;
- open space and conservation areas;
- community and recreation facilities;
- archaeology;
- bushfire protection;
- building guidelines;
- tourist uses; and
- development below the mean high water mark (MHW).

DCP 22 is outdated as it was prepared prior to recent environmental studies and investigations into the capabilities and suitability of the site. While many of the management principles and actions outlined in the DCP remain relevant, some of the specific controls are no longer appropriate as they are based on a previous master plan that has little resemblance to the current (and proposed) development of the site, nor in any event, can this master plan be realised, given the current planning legislation. It is anticipated that the DCP will be repealed and replaced by the concept plan for the Riverside at Tea Gardens Estate.

Compliance with DCP 22 is detailed within *Table 5 of Annex M of Volume 1B*. The proposed development has undergone design changes to meet the requirements of Council's revised draft Housing Strategy. The design is therefore inconsistent with the intended use envisaged by DCP 22 which included provision for a golf course development. The golf course element of the design has been removed. The provision of views of the golf course cannot be achieved since a golf course no longer forms part of the design. The aesthetic values of the Myall River and SEPP 14 Wetland will be maintained, with the wetland buffer and foreshore park preventing encroachment of the built form into these natural places and ensuring the values of these areas are conserved.

Development Control Plan 30 Residential Urban Areas

Development Control Plan 30 – Residential-Urban Areas (DCP 30) provides design guidelines for high quality urban housing. DCP 30 provides performance criteria that should be considered in the design of residential developments. Design elements covered in DCP 30 include:

- site planning;
- site analysis;
- site layout;
- building design;
- building appearance;
- landscape design;
- security; and
- services and site facilities.

The subdivision layout allows for dwellings to be erected that generally comply with the provisions of DCP 30. Lot sizes vary from less than 450m² (generally corner duplex lots or lots with rear lane access) to greater than 650m².

Development Control Plan 31 - Subdivision

Development Control Plan 31 – Subdivision (DCP 31) outlines the subdivision requirements in residential, commercial/industrial and rural and environmental zones. Section 2 outlines the general requirements for subdivision in all zones regarding site considerations, site hazards, road design and construction, landscaping and site design, services, drainage, existing development and heritage and environmental protection.

Section 3 of DCP 31 relates to residential subdivision. Performance criteria are provided in DCP 31 which are intended as a guide to developers. Generally lots less than 450m² will not be permitted in a residential zone, and lots over 450m² should be capable of containing a building envelope measuring 8m x 20m or 10m x 16m and have private open space areas of 40m² with a minimum dimension of 4m. However, the *revised draft Tea Gardens / Hawks Nest Housing Strategy* recommends that this DCP be amended to make provision for small lot housing (i.e. between 300m² and 450m²).

The project generally complies with the provisions of DCP 31 as detailed within Table 6 of *Annex M, Volume 1*. However, there are a small number of departures from the DCP as documented below:

- the DCP states '*Proposed allotments in urban areas (excluding corner allotments) will not be permitted to have frontages to more than one public road*'.

The proposed development partially complies with this requirement by:

- one proposed multi - dwelling lot has a frontage to two public roads to reduce the bulk of the built form presented by dual garages and dwellings. The ability for multiple dwelling lots to present to both streets frontages provides for greater flexibility in design;
- a number of allotments less than 450m² have frontages to a public road as well as a laneway. These lots are smaller than the majority of lots to provide housing choice with the potential to develop terrace style housing. These lots also front open space areas. The reduced width of these lots would create an undesirable streetscape if driveways were provided side-by-side in close proximity to the adjoining public open space. In order to provide an improved amenity to the streetscape, rear laneways have been provided to accommodate on-site parking; and
- a number of allotments proposed between 450m² - 550m², 550m² - 650m² and greater than 650m² have frontages to more than one public road. These lots are located within the south east portion of the Concept Plan and provide for greater design flexibility for future potential home based business (refer to *Section 3.2.2*), which would require additional parking spaces. In order to provide an improved amenity to the streetscape, dual access has been provided to accommodate rear and front on-site parking.

The use of rear laneways and access ways is shown in Drawing No. R.C.-07 within *Volume 2*.

- the road network proposed differs from the structure plan produced by Council. The alternate design however adequately manages the existing and predicted traffic volumes, provides public transport routes and connects to surrounding developments including Shearwater Estate to the north, Myall Quays to the south and the future development of Myall River Downs to the west. The alternate design is supported by a Traffic Assessment prepared by Mark Waugh Pty Ltd contained within *Volume 5*. Architectural Drawing No. R.C - 04 reproduced in *Volume 2* identifies the transport and access plan for the Riverside development. The plan shows that ready access to bus routes is provided to all dwellings based on the 400m criteria.

Development Control Plan 42- Residential Development Tea Gardens

This plan does not apply to the Riverside site as it was deemed by Great Lakes Council that effective means of control under the Community Titles Act already exist at the Community Association level.

Stormwater Quality Development Control Plan

The Great Lakes *Stormwater Quality Development Control Plan* (Stormwater DCP) encourages good design and technology to improve the water quality of the Great Lakes area. It specifies that development will need to reduce the volume of stormwater runoff and pollutants in stormwater that is directly connected to Council's stormwater drainage network. The Stormwater DCP applies to land zoned 1(c) and all 2, 3, 4, 5 and 6 zones under the Great Lakes LEP 1996. Therefore, the Stormwater DCP currently applies to the land zoned 2(f) at the 'Riverside at Tea Gardens' site.

Subdivision

Under the Stormwater DCP, subdivisions must either meet stormwater management requirements outlined in the relevant catchment strategy or DCP, or where there are no specific Council strategies or DCPs, meet the requirements in Section 2.4 of the *Stormwater Quality Development Control Plan*. Section 2.4 states that applicants for subdivision will need to model post-development pollutant loads for the proposed land use and that the applicant must use acceptable modelling software to produce these results. This information must be submitted with a development application.

Development

Under Section 3.3 of the Stormwater DCP, residential development (a detached house on one lot or dual occupancy development) complies with the DCP if it prevents runoff from all driveways being direct-connected to a stormwater drainage network draining to the street (i.e. by ensuring that stormwater drains across the site or to on-site landscaped or infiltration areas provided suitable soils are present).

Section 3.4 of the Stormwater DCP relates to tourist, commercial, retail and industrial developments. A development complies with the DCP if it captures and stores the first flush of 2mm from all impermeable site areas. The required storage volume (V) is:

$$V \text{ (litres)} = \text{total impermeable site area (m}^2\text{)} \times 2$$

Overflows from the storage tank/s must be directed to an on-site landscaped area/s for infiltration.

Stormwater management for the site has been the subject of exhaustive studies and a best practice stormwater strategy has been prepared. Details are provided in *Volume 3*.

4.5.3 Car Parking Policy

Great Lakes Council *Car Parking Policy* outlines the amount of car parking required for various types of development. *Table 4.3* outlines the requirements for development permissible in the Residential 2(f) Mixed Residential-Commercial zone.

Table 4.3 Car Parking Requirements

Land Use	Type of Development	Car Spaces Required		
Residential*	Dwelling Houses	1 covered space		
	Dual Occupancy (Granny Flat)	2 spaces		
	Residential Buildings	Flat	1space/1 bedroom unit, plus	
			1.2 spaces/2 bedroom unit, plus 1.5 spaces/3 or more bedroom unit, plus 0.2 visitor spaces/unit, plus 1 trailer space/8 units (0.125/unit)	
Casual Accommodation	Bed & Breakfast	1 space/bedroom plus proprietor space		
	Motels		1 space/unit, plus 1 space/2 employees, plus 1 space/20m ² floor area, plus 1 space/20 seats of a function room, plus	
		Hotels		1 space/8m ² of bar space 1 space/5m ² bar area, plus 1 space/6m ² lounge area, plus
				1 space/room, plus 1 space/3 employees, plus 1 space/20 seats of a public dining room, plus

Land Use	Type of Development	Car Spaces Required
		1 space/20 seats of a function room
Commercial	Offices	1 space/20m ² of gross leasable floor area (ground floor) 1 space/30m ² of gross leasable floor area (1 st floor and above)
	Professional Offices/Consulting Rooms	4 spaces/surgery
	Service Stations	5 spaces/service bay, plus 1 space/20m ² of retail sales area
	Shops	1 space every 20m ² of gross leasable floor area (ground floor) 1 space every 30m ² of gross leasable floor area (first floor level and above)
Recreational	Squash & Tennis Courts	3 spaces/court
	Bowling Alleys	3 spaces/bowling alley
	Bowling Greens	20 spaces/bowling green
	Gymnasiums	1 space/25m ² of gross floor area
	Caravan Parks	1 space/van site, plus 1 visitor space/20 van sites
	Restaurants within Commercial Area or Complex	1 space/20m ² dining area of restaurant at ground floor level 1 space/30m ² of dining area for restaurant above the ground floor
	Restaurants not part of a Commercial Area or Complex	1 space/10m ² of dining area
Recreational	Licensed Clubs	1 space/5m ² bar area, plus 1 space/6m ² of lounge area, plus 1 space/3 employees, plus 1 space/20m ² of gross floor area of a public restaurant, plus 1 space/20 seats in an auditorium
	Theatres/Churches and other places of Assembly	1 space/10 seats, or 1 space/10m ² of seating area, whichever is greater
* Homes for the aged, hostels & nursing/convalescent homes have different car parking requirements.		

The above car parking requirements are considered excessive for the site as a 'walkable community' has been identified as an appropriate aim for any proposed development. Nevertheless, lots are of sufficient size to accommodate a dwelling and on site car parking space.

4.5.4

Draft Development Control Plan 34 – Acid Sulphate Soils

Draft Development Control Plan 34 Acid Sulphate Soils provides guidance regarding the procedures to be followed in areas affected by acid sulphate soils. According to the Acid Sulphate Soils Risk Map for Port Stephens the site

is located in an area where there is a low probability of acid sulphate soil materials occurring between one metre and three metres below the ground surface. An updated assessment of potential ASS for the revised Concept Plan has been prepared (refer to *Volume 4*) which addresses the previous concerns of the DoP and the PAC.

4.5.5 *Local Planning Strategies and Studies*

Tea Gardens Hawks Nest Conservation and Development Strategy

The *Tea Gardens / Hawks Nest Conservation and Development Strategy* (Great Lakes Council and Acacia Environmental Planning Pty Ltd, 2003) was produced in response to the increasing demand for development in the area. The strategy identifies areas that are suitable for development and areas that should be conserved for ecological purposes. The objectives of the strategy are to:

1. *Create a conservation framework that identifies and conserves important habitats and linkages.*
2. *Identify land that is suitable for future living.*
3. *Give the providers of public facilities and services information to help them plan new infrastructure.*
4. *Promote orderly and efficient growth that is consistent with the principles of ecologically sustainable development (ESD) and the objects of the Environmental Planning and Assessment Act 1979*
5. *Indicate preferred land uses in development and investigation precincts.*
6. *Identify guiding principles for future development.*
7. *Provide greater certainty in the rezoning process to all stakeholders.*

The Riverside at Tea Gardens site is not identified in the strategy as a potential future residential area, due to the fact that the site is already zoned 2(f) and can be developed for urban purposes. The strategy does however identify the Myall Quays (Riverside at Tea Gardens) site on its precinct map and provides brief comments including that the site was rezoned in 2000, and is suitable for low and medium density residential development, tourism, shopping, community and recreational facilities.

Tea Gardens/Hawks Nest Housing Strategy

The Tea Gardens/Hawks Nest Housing Strategy was adopted by Council in November 2006. Subject to suitable controls being in place, the strategy recommends an average net density of 13 dwellings per hectare for the site,

along with the flexibility to site slightly denser developments closer to identified focal points and disperse smaller lot housing throughout. Riverside at Tea Gardens will have a minimum net density of 13 dwellings per hectare in accordance with Council's Housing Strategy. Smaller lot housing is also dispersed throughout the site, creating the flexibility to allow for a range of housing types.

Urban Design and Density Review Forster Tuncurry and Tea Gardens Hawks Nest

The Forster/Tuncurry & Tea Gardens/Hawks Nest Urban Design and Density Review Background Report was prepared as a follow-on from the Housing Strategies for Forster/Tuncurry and Tea Gardens/Hawks Nest. The Report identifies planning framework and assessment deficiencies for high and medium density residential development and town centre urban designs, which have led to the development of Development Control Plan No.51 - Forster/Tuncurry Town Centres and Development Control Plan No.52 Tea Gardens/Hawks Nest Town Centres.

The Riverside at Tea Gardens site is not a site defined within DCP 52 and the planning controls within DCP 52 are not applicable to the Riverside site.

Recovery Plan for the Hawks Nest and Tea Gardens Endangered Koala (Phascolarctos Cinereus) Population

The Hawks Nest and Tea Gardens Koala population was listed as endangered in 1999 under the *Threatened Species Conservation Act 1995*, and as a result the Director-General of the National Parks and Wildlife Service (now Office of Environment and Heritage (OEH)) was required to prepare a Recovery Plan for the population.

The Recovery Plan outlines measures that Council, as the land use planning and development control authority, should follow when assessing development applications. The Recovery Plan encourages the conservation of koala habitat and for identified areas of koala habitat to be incorporated into local planning instruments. Koala Management plans will be prepared to support any development proposed, where applicable.

5 ENVIRONMENTAL RISK ANALYSIS

This chapter documents the environmental risk assessment which has been undertaken and identifies the controls and mitigation measures (in association with Chapter 6) proposed to appropriately address the identified hazards.

5.1 METHODOLOGY

An environmental risk assessment was undertaken to identify the hazards, analyse the risks, determine the acceptability of risks and recommend controls related to the impact of the proposal.

Table 5.1 provides a methodology for summarising the predicted consequences from the Project on natural and built landscape features, and cross-references these with the likelihood of any impacts occurring on a particular feature. This results in a ranking which is indicative of the associated risk that the Project may present to a given feature.

This risk assessment was conducted based on pre-mitigation scenarios. Identification of these high risk features was a key preliminary step in the assessment process. Assessments and management measures presented throughout this report have, where appropriate, been tailored according to the level of risk.

5.2 RESULTS

Potential temporary and long term impacts of the Project and the results of the systematic risk assessment are presented in *Table 5.2*.

Table 5.1 Risk Matrix

		CONSEQUENCE				
		Insignificant	Minor	Moderate	Major	Catastrophic
People		No Injuries	First aid treatment, minor reduction in amenity	Medical treatment required, moderately reduced amenity	Extensive injuries, substantially reduced amenity	Death
Environment		No environment effects	Could affect the environment	Water, soil or air likely to be affected for the short term	Water, soil or air affected badly. Damage or death to flora or fauna	Long term damage to water, soil or air. Damage or death to significant numbers of flora and fauna
Equipment or Infrastructure Damage or Requirement for New		Under \$5K	\$5K to \$50K	\$50K to \$100K	\$100K to \$500K	Above \$500K
Construction Delays		Less than one (1) day	One (1) days delay	Two (2) days delay	Less than one (1) week greater than (2) days delay	Greater than one (1) weeks delay
Likelihood	Almost Certain: Is expected to occur in most circumstances	15	10	6	3	1
	Likely: Will probably occur in most circumstances.	19	14	9	5	2
	Moderate: Might occur at some time	22	18	13	8	4
	Unlikely: Could occur at some time	24	21	17	12	7
	Rare: May occur in exceptional circumstances	25	23	20	16	11

RISK	Category I	Category II	Category III	Category IV
	(Low)	(Moderate)	(High)	(Critical)

Table 5.2 Summary of Predicted Project Impacts and Management Priorities

Diagnostic Element	Feature	Consequence	Likelihood	Score	Risk Class	Notes
Groundwater	Impacts on groundwater levels as a result of the proposed development	Moderate (Environment)	Unlikely	Moderate (17)	Category II	Survey results indicate that groundwater levels are likely to be drawdown by approximately 0.05 to 0.1 m over the adjacent SEPP14 wetlands due to reductions to recharge in the area of the site. Changes to groundwater flow direction at the site boundaries and within adjoining wetlands are likely to be negligible.
	Impacts on groundwater quality	Moderate (Environment)	Unlikely	Moderate (17)	Category II	When compared to the Australian Drinking Water Guidelines, the existing groundwater is not potable due to concentrations of a range of analytes exceeding the drinking water guidelines. The installation of ancillary local ponds or lined wetlands will manage the water quality discharging into the proposed unlined freshwater lakes to protect groundwater quality.
Surface Water	Impacts on surface water quality	Moderate (Environment)	Moderate	High (13)	Category III	A monitoring program is proposed for the SEPP 14 wetlands and constructed ponds and wetlands. The management actions proposed to rectify any failures to meet the water quality objectives are also identified.
Wastewater	Effluent Disposal	Moderate (Environment)	Moderate	High (13)	Category III	<p>The management objectives adopted in developing a servicing concept for the site include the following:</p> <ul style="list-style-type: none"> • minimise impacts on existing infrastructure by reducing sewage loads where possible; • minimise impacts on receiving waters by designing optimal effluent management practices and minimising effluent discharge; • reuse of treated effluent where possible and appropriate; and • infrastructure to be designed with long term sustainability in mind. This will involve location of sewage systems with adequate buffer zones and flexibility for future expansion to meet potential augmentation requirements.

Diagnostic Element	Feature	Consequence	Likelihood	Score	Risk Class	Notes
SEPP 14 Wetland	Impacts on SEPP 14 wetland during construction	Moderate (Environment)	Unlikely	Moderate (17)	Category II	<p>Developments adjacent to wetlands have the potential to indirectly affect the wetland communities in a number of ways:</p> <ul style="list-style-type: none"> • changes in quantity and quality of surface and groundwater flows into the wetlands, • human pedestrian and vehicular intrusion; and • general 'edge effects', including: • predation of native fauna by domestic cats and dogs; • 'light spill' of street lights which can affect the behaviour of native animals; • dumping of rubbish and garden refuse; • 'weed creep' from lawn grasses, etc.; and • mowing of wetland margins <p>A Wetland Management Plan is to be prepared which will include:</p> <ul style="list-style-type: none"> • a description of measures to be adopted to protect the wetland during subdivision construction; • measures to control human access into wetland areas; • a monitoring program to confirm that the proposed development and associated works do not have adverse effects on the wetlands; and • an adaptive management framework that can permit response to any unanticipated impacts on the wetlands.
	Impacts on SEPP 14 wetland post occupancy	Moderate (Environment)	Unlikely	Moderate (17)	Category II	As above.

Diagnostic Element	Feature	Consequence	Likelihood	Score	Risk Class	Notes
Sea Level Rise / Climate Change	Impact of sea level rise on the proposed development	Major (Infrastructure / Equipment Damage)	Moderate	Critical (8)	Category IV	In order to account for the possible impacts of climate change, modifications have had to be made to the previously proposed drainage regime in the Riverside proposal. In order to maintain the existing approach, the most significant change has been to re-profile the site, to ensure that the minimum invert of all new drainage structures are now at or above the predicted worst post climate change Mean High Water of 1.4m AHD and that surface site levels and future floor levels comply with flood, freeboard and safe wading requirements.
Fisheries and Aquaculture	Surface water impacts resulting in impacts to fishing and aquaculture industry	Moderate (Environment)	Unlikely	Moderate (17)	Category II	It is not anticipated that there will be any water quality impacts within the Myall River and therefore the oyster leases will not be negatively impacted in any way.
Soils and contamination	Soil erosion	Moderate (Environment)	Moderate	High (13)	Category III	There is potential for soil erosion during construction activities. A Construction Environmental Management Plan (CEMP) has been prepared (<i>Volume 5</i>) which identifies management measures to be implemented during construction to reduce impacts.
	Disturbance of acid sulphate soils during excavation	Major (Environment)	Moderate	Critical (8)	Category IV	A geotechnical assessment which investigated the potential for acid sulphate soils on site was carried out by Coffey Geotechnics Pty Ltd (2008) (refer to <i>Volume 4</i>). A supplementary assessment prepared by Coffey Geotechnics Pty Ltd (2011) is also provided in <i>Volume 4</i> . To date there is no indication of sulfate production in the area. Several test holes were drilled by Coffey and the soils tested for the potential to produce acid sulfate soils. BH37 is located in the area where the maximum drawdown has been predicted and the results of SPOCAS analysis indicate that from 2 m below surface, samples tested exceed the Acid Sulfate Soil Management Advisory Committee (ASSMAC) action criteria. The potential to produce acid soils increased with depth with the interval 2.0 - 2.5 m just exceeding the criteria. A revised Acid Sulphate Soils Management Plan has been prepared by Coffey Geotechnics Pty Ltd (2011) in view of the potential for acid sulphate soils to be present (refer to <i>Volume 4</i>).

Diagnostic Element	Feature	Consequence	Likelihood	Score	Risk Class	Notes
	Identification of contamination during construction	Moderate (Environment)	Unlikely	Moderate (17)	Category II	<ul style="list-style-type: none"> Potential for existing site contamination is considered to be low and if encountered, contamination is likely to be limited in extent to localised zones within the site. The site is considered to have low potential to adversely affect human health or the environment either on surrounding properties or local receiving waters. The Phase 1 ESA (ERM) undertaken for the Riverside site did not identify any significant potential for site contamination. The site is therefore considered suitable for the proposed development.
	Construction activities resulting in contamination as a result of spills / release of substances	Moderate (Environment)	Unlikely	Moderate (17)	Category II	<ul style="list-style-type: none"> There is potential for spills / release of substances during construction activities. A Construction Environmental Management Plan has been prepared which identifies management measures to be implemented during construction to reduce impacts, including potential for spills.

Diagnostic Element	Feature	Consequence	Likelihood	Score	Risk Class	Notes
Aboriginal Heritage	Impacts to Aboriginal heritage during construction	Major (Environment)	Unlikely	High (12)	Category III	<ul style="list-style-type: none"> Field investigations recorded one new midden site (Riverside_01) located on a sand dune in close proximity to the SEPP 14 wetland and wetland buffer within the proposed tourist precinct; Given the level of disturbance, this midden is considered to have moderate significance only. Further investigations would be required to confirm the extent, depth and contents of this site should development be proposed within 10 metres of its current extent; A previously identified site (38-05-0148), is recognised as having high archaeological significance. Given its location within a protected SEPP 14 wetland it is likely to continue to be remote from any development; Neither Riverside_01 or site 38-05-0148 will be directly impacted by the proposed development; Riverside_01 is to be protected on all sides by a minimum 10 metre buffer. No construction / excavation works, including the storage of machinery can impinge on this buffer zone; A management plan will be developed in consultation with the local Aboriginal community to consider its significance and treatment within the site; and Monitoring of clearing and initial excavation works across the whole site should be undertaken by the Karuah LALC.
	Impacts to identified Aboriginal sites post occupancy of estate	Moderate (Environment)	Unlikely	Moderate (17)	Category II	<ul style="list-style-type: none"> A management plan will be developed in consultation with the local Aboriginal community to consider the ongoing management of the identified midden (Riverside_01).

Diagnostic Element	Feature	Consequence	Likelihood	Score	Risk Class	Notes
Bushfire	Bushfire risks to proposed residential estate	Catastrophic (People)	Rare	High (11)	Category III	<ul style="list-style-type: none"> Part of the site is mapped as bush fire prone land in the Great Lakes Council bush fire prone land mapping; A Bushfire Threat Assessment (Conacher, 2011) (<i>Volume 4</i>) has been prepared and identified that the potential bush fire threat was from Dry Sclerophyll Forest vegetation to the north of the site. A reduced risk is present to the east of the site comprising the Forested Wetlands and Saline Wetlands. A greatly reduced risk is present from the west and south west as a result of cleared grass land, scattered trees, industrial land use and existing residential development; The proposal incorporates a range of bush fire mitigation measures, including Asset Protection Zones (APZs) determined in accordance with NSW Rural Fire Service (2006) guidelines, building construction standards, hazard management, evacuation routes, and availability to fire fighting services, water supply and communication.

Diagnostic Element	Feature	Consequence	Likelihood	Score	Risk Class	Notes
Flora and Fauna	Impacts on flora and fauna (species and communities) as a result of clearing	Major (Environment)	Likely	Critical (5)	Category IV	<ul style="list-style-type: none"> The primary impact resulting from the proposed development is the loss of vegetation within the development footprint through vegetation clearance. An Ecological Site Management Strategy and biodiversity offset strategy (refer to <i>Volume 4</i>) have been developed to mitigate the impacts of the Project on biodiversity. To address the potential impacts to the SEPP 14 Wetland and adjacent wetland buffer, an Integrated Water Management Strategy has been developed (Cardno, 2011) (refer to <i>Volume 3</i> of EA) to manage the groundwater and surface water flows. Avoidance Measures: Sizeable areas of habitat will be avoided by reducing the size of the proposed development footprint and conserving land that was otherwise proposed for development. Mitigation Measures: A number of mitigation measures are proposed for the Project, including changes in land uses and ownership, maintenance and creation of habitat features, management of hydrology and management of retained vegetation. In addition to these measures, a Koala Plan of Management (refer to <i>Volume 4</i>) has been prepared for site. Compensatory Measures: Despite the aforementioned avoidance measures and mitigation measures, there would be a net loss of native vegetation as a result of the project. To offset the net loss of native vegetation, compensatory measures are being provided on and off site so as to add to the conserved land in the locality and offset the ecological impacts on the site.

Diagnostic Element	Feature	Consequence	Likelihood	Score	Risk Class	Notes
	Impacts on wildlife corridors and links to adjoining areas	Major (Environment)	Unlikely	High (12)	Category III	<ul style="list-style-type: none"> The Riverside project will reduce the widths of potential local movement corridors for wildlife, constituting dispersal, foraging and nesting habitat for a range of fauna groups, particularly birds and small-medium sized mammals. The occurrence of the regional corridor on cleared agricultural land and industrial estates has reduced the biodiversity values of the regional corridor in the locality. Vegetation currently occurring to the north of the site strengthens the integrity of the retained corridor.
Noise	Noise emissions associated with the Project	Moderate (Environment)	Unlikely	Moderate (17)	Category II	<ul style="list-style-type: none"> A Construction Noise Assessment (ERM, 2008) (<i>Volume 5</i>) has been prepared which identified that construction noise criteria is predicted to be exceeded during the construction of the stormwater quality / detention ponds when plant items are stripping the surface soils, although would reduce significantly when they are at lower depths within the lower areas of the proposed ponds. The implementation of a number of recommended management and mitigation strategies will significantly reduce impacts on nearby residences, including: <ul style="list-style-type: none"> forming earth mounds between the construction site and residences during initial stripping. placement of barriers where possible nearest to plant and equipment to maximise barrier attenuation; and avoiding any coincidence of noisy plant working together in close proximity simultaneously near to sensitive receivers.
Air Quality	Air (dust) emissions associated with the Project	Moderate (Environment)	Unlikely	Moderate (17)	Category II	<ul style="list-style-type: none"> There is potential for dust to be generated from exposed surfaces during construction activities. A CEMP (ERM, 2011) (<i>Volume 5</i>) has been prepared which identifies management measures to be implemented during construction to reduce impacts, including dust suppression.

Diagnostic Element	Feature	Consequence	Likelihood	Score	Risk Class	Notes
Traffic	Increased traffic associated with the Project	Minor (Environment)	Likely	High (14)	Category III	The Traffic Impact Assessment (BTF, 2011) (<i>Volume 5</i>) has been prepared and concludes that the existing road system beyond the site is able to cater for the traffic demands of the proposed residential development of both Myall Quays and Myall River Downs. The existing intersection control at Myall Quays Boulevard and Myall Street, when combined with a 2 nd intersection (of similar design) on Myall Street, and also with access to Toonang Drive can accommodate the entire Riverside Concept Plan area (920 lots.)
Services/ Infrastructure	Increased demand for infrastructure services (water, sewage, electricity)	Moderate (Environment)	Unlikely	Moderate (17)	Category II	A Servicing Strategy (Tattersall Lander, 2011) has been prepared, is included in <i>Volume 5</i> and details that the overall sewer reticulation system currently envisages a roll out of 10 vacuum lines. The vacuum sewer system has significant environmental advantages over the usual gravity service. Water supply services will be increased from the existing dual supplies in Myall Street to a triple pipe supply via North Shearwater.
Social	Increased demand for social and community services (medial, community facilities, public transport)	Moderate	Unlikely	Moderate (17)	Category II	A Social Impact Assessment (Duo, 2010) has been prepared and is included in <i>Volume 5</i> . The assessment states that Riverside is well served by education and medical facilities and has access to public transport and employment areas. The development offers the opportunity to significantly enhance the community facilities in Tea Gardens.